

Gent.

Nathaniel Bliss was the son of Nath. Bliss, of Bisley in Gloucestershire. He was matriculated at Sember Oct 10, 1716 proceeded B. A. June 1, 1719. M.A. May 2, 1723. In 1731 he was Rector of St Ebbes, Oxford: afterwards Observer at Greenwich 1762, Savilian prof. of Astronomy 1763 and held 1764

He had a son John Bliss, mat. of Ch. Ch. Oct. 24, 1740 being then B. of Merton, probably a clerk or chaplain, Mar. 11, 1745 M.A. July 7, 1747.

William Wales, whose autograph is on the title was, every celebrated mathematician, and master of that school, in Christ's Hospital. He was the author also of several Observations, and assisted Dean Vincent in his Commerce and Navigation of the Ancients in the Indian Ocean.

8562 d.21



Astronomia Carolina :

A NEW

THEORY

OF THE

Cœlestial Motions.

Composed according to the best Observations, and most Rational Grounds of Art; Yet far more Easie, Expedite and Perspicuous, than any before Extant.

WITH

Exact and most Easie TABLES thereunto, and Precepts for the Calculation of Eclipses, &c.

By THO. STREETE.

The Second Edition Corrected.

To which are Added
Some Lunar and Planetary OBSERVATIONS,
With a PROPOSAL of their Uses in Navigation.

L O N D O N :

Printed for R. Smith and S. Briscoe, and Sold by J. Woodward, in St. Christopher's Church-Yard, Threadneedle-street, and J. Morphew, near Stationers-Hall. 1710.

ASTRONOMICAL TABLES FOR THE YEAR 1710

Computed according to the best Observations, and most Rational Grounds of Art; Yet far more Exact, Extensive, and Perpetual, than any former.



Exact and most full Tables of the Sun's Motion, and the Places of the Planets, for the Calculation of Eclipses, and other Astronomical Phenomena.

By THOMAS STREET.

The Second Edition Corrected, and with many Additions, to which are added

Some Lunar and Planetary OBSERVATIONS, and to which are added, a Table of their Uses in Navigation.

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THE PREFACE.

MR. Thomas Streete, the Author of the following Tables, has too well deserv'd of the Science of Astronomy, that his Memory should not still be precious with those that have any Relish for the Knowledge of the Celestial Motions. And the Tables themselves are so neatly contriv'd to perform the Calculations of the Planets Places with all possible Ease, that it were pity that they should lose any thing, in this their Second Edition; and accordingly, nothing has been wanting to make them as correct as possible, if you excuse some few and very evident Errata in the Solar Tables: The rest, together with the Canon of Triangles, having been revis'd with all due Care, and many Faults in them amended, which had pass'd in the former Edition: As also in the Catalogue of Fix'd Stars annex'd.

It is true, that our Author before his Death had attempted to alter some things in his Tables, as he thought, to the best Advantage; but having left very little of the Work done,

The P R E F A C E.

we thought it not adviseable to alter the Book according thereto; for that all the Examples, and the Tables themselves, must have been wrought over again de novo, which would have been a Task equal to the first Composition. The Reader therefore will please to accept this Restitution of a Book wholly out of Print, and deservedly esteem'd by the Connoisseurs, as a choice Performance in Astronomy.

To it we have subjoyn'd the Memorial Verses of our Author, as far as they relate to the Ecclesiastical and Civil Calendar, omitting those that regard the Lunar and Planetary Motions, as seeming too much for the Memory.

To which are added a Series of Observations of the Moon and Planets, but chiefly of the Moon, made near London, in the Years 1683, and 1684, with a Sextant of near Six Foot Radius, in order to investigate the Lunar Theory à Posteriori; With a Proposal how to find the Longitude at Sea with Certainty, by Help of those and the like Observations: By Mr. Edm. Halley, Professor of Geometry in Oxford; who, out of Respect to the Author, was pleas'd to take the Pains to revise the much greater Part of the Tables.

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pedali, habitæ. Autore D. EDM. HALLEY, Geom. Profess. Savil. Oxon. p. 9.
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Of the Visible World.
 Tabula Motus Medii Lunæ à Sole.
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OF THE

Visible World,

AND

Planetary System.

THE Visible World, and every Part thereof, consists of three Principles, *Sulphur, Salt and Mercury.*

The *Sulphur*, or Soul of the World, from whence proceedeth Heat and Light, is most manifest in the Glorious Bodies of the Sun and Fix'd Stars.

The *Salt*, or Corporeity of all things, is the chief Consistence of the Planets *Saturn* and *Jupiter*, with their Attendants, *Mars*, our *Earth* with the *Moon, Venus* and *Mercury*.

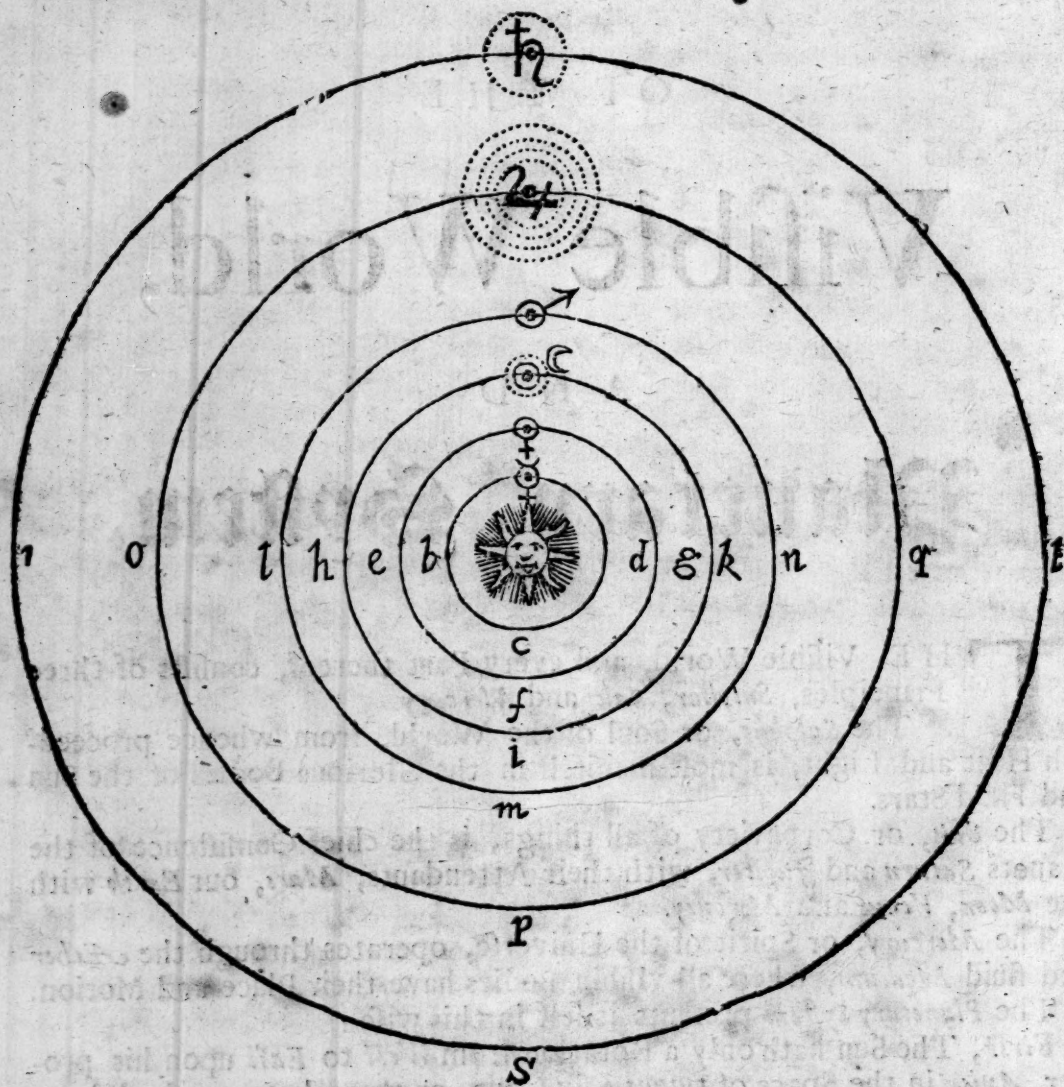
The *Mercury*, or Spirit of the Universe, operates through the *Aether* and fluid *Medium*, where all visible Bodies have their Place and Motion.

The *Planetary System* presents it self in this wise :

First, The Sun hath only a Rotation from *West* to *East* upon his proper *Axis*, in the Space of twenty six Days, or thereabouts (as hath been gather'd by *Telescope* Observations of the Motion of certain Spots appearing (at some times) in his Body) his Centre being an immoveable Point, to which the Revolution of all the Planets are referr'd.

The Planets are likewise moved about the Sun from *West* to *East* in several Orbs or Lines returning into themselves ; every Planet in Time exactly proportionable to the Magnitude of his Orb and Distance from

the Sun ; the Revolution of the primary Planets being uniform, and all perpetually constant and regular, as shall be prov'd in its due place : In the mean time observe this Figure,



Wherein $\gamma b e d \gamma$ denotes the Way and Revolution of the Planet *Mercury* about the Sun in 88 Days ; $\varphi e f g \varphi$ the Revolution of *Venus* in 225 Days ; in the Circle $h i k$ the Revolution of the Earth with the *Moon* in one Year ; $\delta l m n \delta$ the Revolution of *Mars* in two Years ; $\chi o p q \chi$ the Revolution of *Jupiter*, with his four Companions, in twelve Years ; $\tau r s t \tau$ the Revolution of *Saturn* with his Ring and Moon, in thirty Years. The

The Moon also circumvolveth the Earth every month; *Jupiters* four Attendants, him, in time corresponding their distances from him, the first and next him in one day 18 hours, the second next without that in three days 13 hours, the third in seven days four hours, and the fourth and outermost in 16 days five hours; *Saturns* Moon moves about him in 16 days, and all from West to East, according to their revolutions about the Sun.

Saturn, Jupiter, Mars, the Earth, Venus and Mercury (whose revolutions respect the Sun only) are called Primary Planets, the rest (that move again about *Saturn, Jupiter, and the Earth*) Secondary.

And besides these motions (truly though rudely here described in this small Figure) its not improbable that every Primary Planet hath his proper revolution upon his *axis*, as the Sun hath his in 26 days, and the Earth hers upon her *Æquinoctial Poles* in 24 hours from West to East.

The Secondary Planets are all of them much less in magnitude than their Primary, and all the Planets together much less than the Sun, from whom they all receive their light, virtue and principal power of motion, he is really one of the Fixt Stars.

And far without this Planetary System are placed all the rest of the Fixt Stars, in several distances, but all unto us incommensurable, the Parallax of the Earths Orbe (of which more in place convenient) being insensible in any of their places; their number is also indeterminable, yet is it not unlikely but they may all have their Planets or Worlds moved about them, as our Sun hath.

But for proof that all these Planets of our System are illuminated by the Sun; its observed by help of the Telescope, that *Venus* and *Mercury* do oft times appear horned, increasing and decreasing in light as the Moon doth, they and *Mars* being always in convenient positions found deficient of their light in the obverse part from the Sun; As for *Jupiter* and *Saturn*, their Orbs bear too large a proportion to the Earths for making any such appearance of the defection of their light; Yet *Jupiter* eclipsing any of his *Satellites* when interposed betwixt the Sun and them (as is reported to have been observed) will easily shew whence he and they have their light.

And whereas some have held opinion that *Saturn* and *Jupiter* are too far distant from the Sun for their receiving so much light from him, and that they have therefore some light of themselves; I say its sufficiently proved in the Opticks, that the farther a luminous body is distant, though it appears thereby so much the lesser, yet the light thereof being contracted is so much the purer, so that without farther dispute, these

two Superior Planets with those lesser attending them have as well as the rest their light from the Sun.

And that the Earth shines at a distance with like splendor as her fellow Planets, will easily appear by her illuminating the darker part of the Moon's subvolvane or lower Hemisphere; as is commonly seen a little before or after the Change, for then to the Moon the appearance of the Earths light is near the Full.

The next thing we shall take notice of, is that the Sun and all the Primary Planets, with their attendants (excepting only a flat Ring which encompasseth *Saturn*) are of Spherical Form, or not considerably differing from it, as may be gathered by the best observations made with the Telescope and other ways.

And for farther demonstration of the affinity of the Earth with the other Planets, we might here instance the different forms observed in the Moon, which questionless can be no other than Sea and Land; the dark parts lying lower then the rest having the true form of Seas; and the shining parts higher and full of inequalities, by their solidity not suffering the Suns light to penetrate (as the waters do) but more strongly reflecting it. *Galileus* gives this farther reason, that the reflection of the Earth, being from infinite Planes, must necessarily make an universal appearance, whereas that of the Water can be but to one certain determinate point.

And as in this secondary Planet the Moon, so in most (if not all) of the Primary Planets, are certain spots or girdles, darker then the rest of their bodies, to an armed eye observable; but these, by reason of their greater remotion from us (though sufficient to the matter in hand) will not admit of any such exact description as we have in our Selenographical Maps and Tables.

The Moon hath been also observed to have (as well as the Earth) her Atmosphere, or a thick vaporous air encompassing her body and refracting the Suns rayes in Solar Eclipses; from which with other considerations, we may rationally conclude that all the Planets have the like.

And thus, in the original substance, harmonious motion, magnitude, Illumination from the Sun and outward Form of the Planets, we may see their affinity amongst themselves, in this and the placing of the Sun and Fixt-Stars, in convenient distances, the admirable concinnity and immense vastitude of the Universe; and in all things the infinite Wisdom, Power and Excellency of the TRI-UNE-BEING their Eternal Author.

Touching New Stars and Comets; after due consideration of what hath

hath been observed concerning them, we may determine that New Stars are (far without our Planetary System) by the vicissitudes of Nature, a concourse of like fiery matter, as that whereof the Sun and Fixt Stars do Consist; but in these new appearances, commonly the weaker intention in Nature being not able to contract the matter into a perfect body; its again by degrees remitted and finally dissolved into its former invisibility; and these during their continuance are fixt in one place as the Fixt-Stars. But Comets do always appear unto us much nearer, and amongst the Orbs of the Planets; they are generated of Planetary substance, but incompact and dissolvable, Illuminated (as the Planets) by the Sun; and according to the general consent of observations, their motions are (as *Kepler* defines them) in or near to right lines.

The old supposition of Solid Orbs to support and carry the Planets, I count scarce worth the mentioning; The Earth we see hath no such Orb, and Nature it self with all observations of the true motions of secondary Planets and of Comets plainly demonstrating the impossibility of any such thing.

Nor shall I here mention any of those many and gross absurdities, which will necessarily follow in all such Systems, as attribute to the Sun or Fixt-Stars any of the Earth's natural motions.

But further to clear the truth from all seeming contradictions; Whereas we see that all Corporeal Substances appertaining to this our Earthly Globe do (proportionably to their quantities) tend downward towards the Earth's center; Let us observe that this comes to pass by the Natural Magnetick power of the Earth, attracting its parts; a property common to every one of the Planets, whereby (according to the Creators will) they became compact bodies, and do retain their constant Form; The Sun also and Fixt-Stars (though of a different Principle) having the like retentive Faculty.

And that the Air, the Clouds, a Bird flying, a Stone falling from any height, an Arrow or Bullet shot or driven any way, and all things else within the Sphere of the Earths activity (whether otherwise moved or not) do Naturally and exactly follow her Annual and Diurnal Motion, so that we the Earths Inhabitants cannot possibly perceive or be made sensible thereof, any other way then by such real demonstrations as are here given; We shall exemplify this in the Planets *Jupiter* and *Saturn*, whole attendants (at a far larger distance) do not only keep their constant revolutions about them, but together with them about the Sun; the like doth our Moon about the Earth, and both about the Sun. So that by the impulse and universal consent of Nature (whether accidental motions be annexed or not) all things so near the Earth do precisely keep the same motion with it.

Of the Sun's Parallax.

THE Sun's Parallax is an Angle at his Center subtended by the Earth's Semidiameter, or the difference between his true place in respect of the Earth's Center and his visible place from some point of her Superficies.

Which Angle or difference is of so great concernment in Astronomy, that without it we can never make any such Theory and Tables of the Coelestial motions, as shall be proved near enough consentaneous unto truth.

Therefore, that we may truly examine and obtain the quantity of this Angle, we are first to consider, that the opinions of *Hipparchus*, *Ptolmy*, *Albategnius*, *Tycho*, *Longomontanus*, *Lansberg*, *Bullialdus* and others, who have supposed the Sun's Horizontal parallax from about $3'$ to $2\frac{1}{2}'$, are not grounded on any real Observations, or certain demonstrative Principles, and therefore to be rejected.

Yet *Kepler* by *Tycho's* observations and his own, finding the Horizontal Parallax of *Mars* in his Acronychial postures to be in a manner insensible, and knowing by undoubted *Axioms* that the Sun's Parallax must be much less, was notwithstanding (as it seems) not willing to confide overmuch in those animadversions, and so diminished it to $1'$.

But since our worthy English man Mr. *Jeremy Horrox*, comparing his own observations with others, hath sufficiently proved, that the greatest Parallax of *Mars* in opposition to the Sun, is scarce at all observable, and never amounting fully to $1'$, by which and his excellent Telescope-observation of *Venus* in the Sun, with her apparent diameter at that time, and other good arguments, he determines the Sun's Horizontal Parallax $15''$ and no more; which small quantity, agreeing well with the most diligently observed Semidiameters of all the Planets, and being farther confirmed by all our best Telescope-observations of the Moon's Dichotomies and otherwise, we accept of, as nearest the truth, and sufficiently exact.

Now the Sun's greatest Parallax being $15''$, it follows by the most exact observations of Noble *Tycho Brahe*, Mr. *Edward Wright* and divers others, that the corrected obliquity of the Ecliptick is just. $23^{\circ} 30'$.

Of the Theory of the Primary Planets Motions.

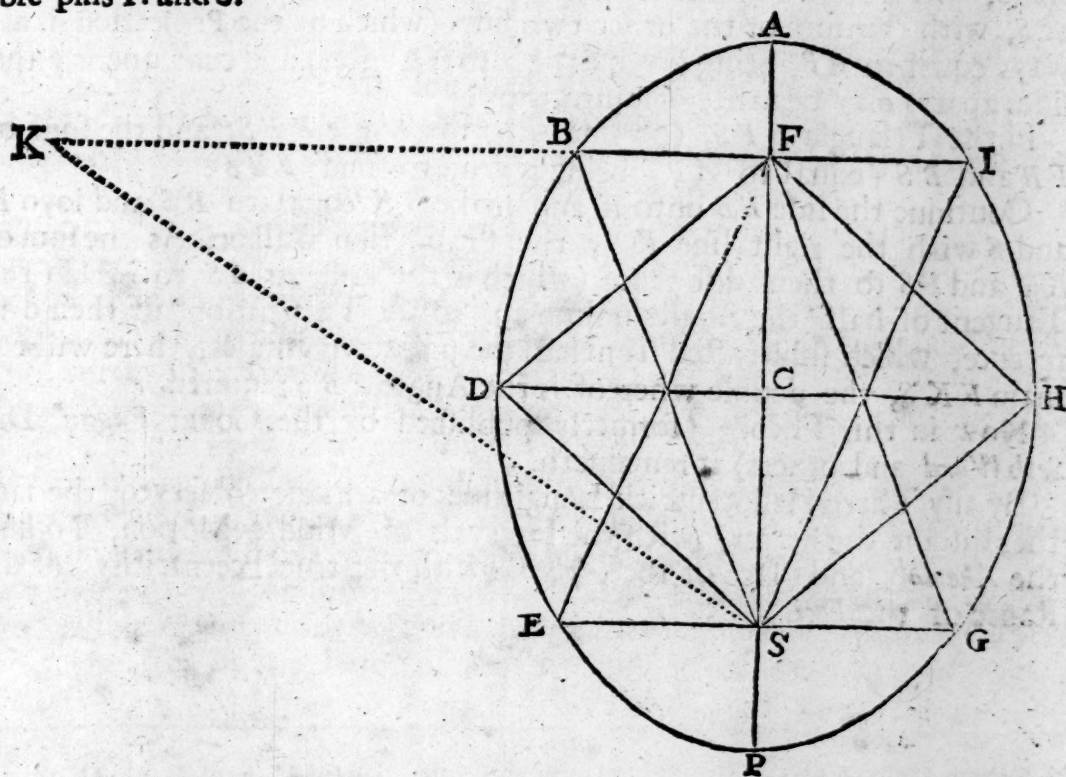
THAT most ingenious Astronomer *Kepler*, by the help of *Tycho's* accurate Observations, first discovered that the ways of the Primary Planets

Planets about the Sun are Elliptical, as is very perceptible in the motions of *Mercury* and *Mars*, and no way contradicted in the rest.

Now what an Ellipsis is, *Apollonius Pergaeus* in *Conicis*, *Claudius Mydorgius* and others have well defined and explicated; but here to give an easy demonstration convenient to our purpose;

In the Revolution of a right lined Triangle in a Plane, so that the base shall be immovable, and sum of the other two sides constant, the motion of the point at the angle opposite to the base describeth an Ellipsis, whose Umbiliques are the fixed points at the other two angles.

The most usual way of drawing this Ellipsis, is with a thread, fastening both ends together, and upon a plain table sticking down two pins, at any convenient distance (as at *F* and *S*) then laying the thread over them, and with the point of another pin or of a pen, bearing it out and carrying your hand about, you may describe the Ellipsis *A. B. D. E. P. G. H. I. A.* whose Umbiliques or Foci are in the place of the two immovable pins *F* and *S*.



and the Center of the Ellipsis equally bisects the line *FS* at *C*. *AP* is the Transverse and longest diameter of the Ellipsis, *DH* the Conjugate and shortest.

S

S denotes the place of the Sun's center, to which the True Motion of the Planet is referred, F the other *Focus* whereunto the Middle or Equal Motion is numbred, A the *Aphelion* where the Planet is farthest distant from the Sun and slowest in Motion, P the *Perihelion* where the Planet is nearest the Sun and swiftest.

And observe that in A and P the line of the mean and true Motion do convene, so that in either of these points the Planet is free from inequality, but in all other points the mean and true Motion differ, and in D . and H . is the greatest Elliptick æquation.

Now suppose the Planet in B , the line of the Middle Motion (according to this Figure) is FB , the line of the true Motion SB , the mean *Anomaly* AFB , the Elliptick æquation or *Prosthaphæresis* FBS , which (in this example) subtracted from AFB , there will remain the true *Anomaly* ASB .

And here note, that in the right lined Triangle (as FBS , FDS , FES , FGS , FHS or FIS) the constant side FS and one of the Angles at F or S , with the sum of the other two sides (which by the Projection is always equal to AP) being given, the other Angles) and consequently the sides apart) may be easily obtained thus;

In the Triangle BFS , the side FS , the Angle BFS , and the sum of FB and BS (equal to AP) being given, to find FBS ;

Continue the side FB unto K and make BK equal to BS and joyn K and S with the right line KS ; the Proportion shall be, As the sum of KF and FS to their difference (which is the same as AS to SP) so the Tangent of half the Angles unknown, to the Tangent of half their difference, which subtracted from half the unknown Angles, there will remain FKS , the double whereof is the Angle FBS required.

Now in this Theory (formerly published by the Count *Pagan*, Dr. *Seth Ward* and others) it remaineth,

By any Three Heliocentrick Longitudes of a Planet observed (the farther distant the better) with the Intervals of Middle Motion, To find the *Anomaly* and Place of the *Aphelion* with the true Eccentricity or distance of the *Foci*.

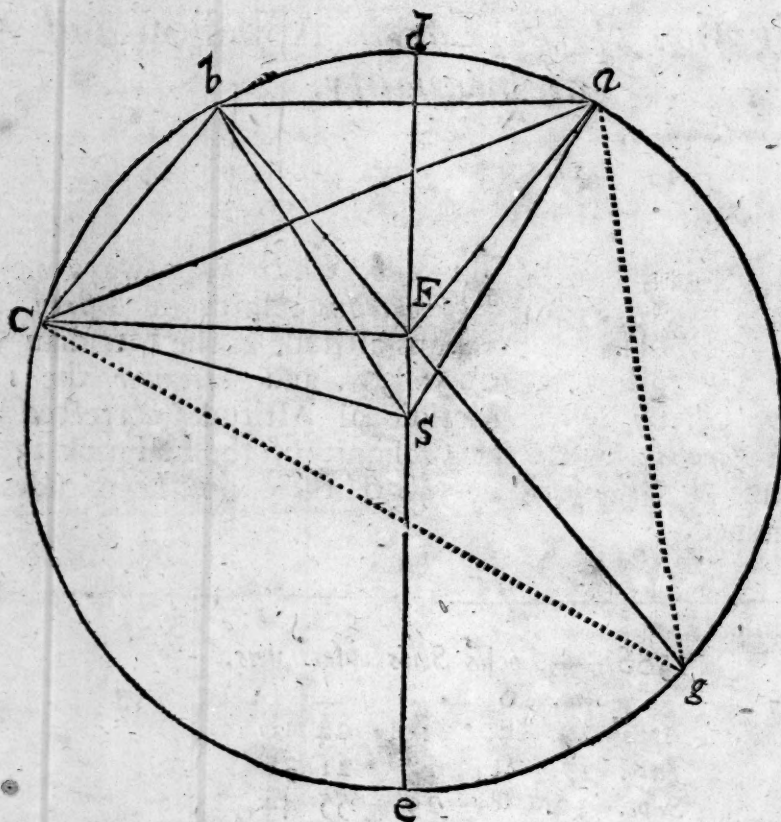
An Investigation of the Earths Aphelion and Annual Inequality.

A Nno 1586. April the 27th (Old Stile, which we always use) Tycho Brahe at Uraniburg (as Longomontanus relates in *Astron. Danica Theoric.* Lib. 1. c. 2.) observed the Suns altitude in the Meridian $50^{\circ} 52' 30''$. July the 27th following $50^{\circ} 56' 30''$. and September the 13th the same year $34^{\circ} 7' 0''$. by which Meridional Altitudes corrected by our fore-mentioned *Parallax*, with the Obliquity of the Ecliptick $23^{\circ} 30' 0''$ and the Latitude of Uraniburg $55^{\circ} 54' 30''$ these three Longitudes of the Sun are determined.

1586 — <i>Locus Solis observatus.</i>				
	die.	S	°	' "
April.	27.	8	16	24 18
July.	27.	Ω	13	21 35
Sept.	13.	☿	29	55 44

Then upon the point S (representing the fixt place of the Sun) we describe the Circle *adbceg*, whose semidiameter is equal to the Transverse diameter of the Earth's Ellipsis; And by the places of the Earth in the first, second and third Observations we draw the semidiameters *Sa*, *Sb*, *Sc*. and also from *F* (denoting the place of the other Focus) the right lines *Fa*, *Fb*, *Fc*.

Now because (as was shewed before) the Angles *FaS*, *FbS*, *FcS*. are equal to half the Angles of æquation in the Ellipsis; Hence the Angles *aFb*, *bFc*, &c. are easily found as followeth.



From the first Observation to the second are 91 days.

The Apparent Motion is the Arch ab . ————— $86^{\circ} 57' 7''$
 The Middle Motion in 91 days. ————— $89 41 38$

The Sum ————— $176 38 45$

The half whereof is the Angle aFb . ————— $88 19 22$

From the second Observation to the third are 48 days

The Apparent Motion is the Arch bc . ————— $46^{\circ} 34' 7''$

The middle motion in 48 days. ————— $47 18 40$

The Sum. ————— $93 52 49$

The half whereof is the Angle bFc . ————— $46^{\circ} 56' 24''$

From

From the first Observation to the third are 139 days.

The Apparent motion is the Arch ac . ————— $133^{\circ} 31' 16''$

The middle motion in 139 days. ————— $137^{\circ} 0' 18''$

The Sum ————— $270^{\circ} 31' 34''$

The half whereof is the Angle aFc . ————— $135^{\circ} 15' 47''$

Then supposing the Logarithm of cF . 10.000000. extending bF to g and drawing those other right lines as in the Figure, we proceed by the method of *Herigons*.

1. In the Triangle cFg are given cFg the Complement of bFc to a semicircle, cgF the half of bSc the Angle at the Center, and cFa as above, required Fg ,

$Fg c. 23^{\circ} 17' 4''$.-sin. ————— 9.596922

$Fcg. 23. 19.20$.-sin. + cF . — 19.603401

Fg . ————— 10.006479

2. In the Triangle Fga are given Fg . Fga the half of bSa . gFa Complement of bFa . required Fa .

$Fag. 44^{\circ} 50' 49''$.sin: ————— 9.848322

$Fga. 43. 28.33$.sin: ————— 9.837619

Fg . ————— 10.006479

————— 19.844098

Fa ————— 9.995776

3. In The Triangle caF , are given Fa , cF , cFa . required Fac , ca .

$cF + \text{rad.}$ ————— 20.000000

Fa ————— 9.995776

$45.16.43$.tan. ————— 10.004224

c ————— $0.16.43$.tan. — 7.686874

$22.22.6$.tan. — 9.614395

$0.6.53$.tan. — 7.301269

Fac ————— $22.28.59$.sin: — 9.582530

cFa ————— $135.15.47$.sin. + cF — 19.847482

ca ————— 10.264952

(40)

4. In the Iſoſceles Triangle $c S a$. are given $c a$, $c S a$. required $c S$.
and from the Angle $S c a$ ſubſtract $F c a$ there is left $F c S$.

$$c S a \ 133^{\circ}. 31'. 16''. \sin: \text{---} 9.860410$$

$$S a c. \ 23. \ 14. \ 22. \ sin. \text{---} 9.596129$$

$$c a \text{---} \text{---} \text{---} 10.264952$$

$$19.861081$$

$$c S \text{---} \text{---} \text{---} 10.000671$$

5. In the Triangle $F c S$. are given $c F$, $c S$, $F c S$. required $F S c$, $F S$.

$$c S + \text{rad:} \text{---} c F.$$

$$45^{\circ}. 2'. 39''. \tan. \text{---} 10.000671$$

$$\text{rad:} \ 0. \ 2. \ 39. \ tan: \text{---} 6.886892$$

$$89. \ 30. \ 25. \ tan. \text{---} 12.065218$$

$$5. \ 7. \ 4. \ tan. \text{---} 8.952110$$

$$F S c. \ 84. \ 23. \ 21. \ sin: \text{---} 9.997914$$

$$F c S. \ 0. \ 59. \ 9. \ sin: + \text{rad:} \ 18.235659$$

$$F S. \text{---} \text{---} \text{---} 8.237745$$

$$\text{The Place of the Sun in the third observation} \text{---} \text{---} 5^{\circ}. 29'. 55''. 44''$$

$$\text{The True Anomaly } F S c \text{ ſubſtract} \text{---} \text{---} 2. \ 24. \ 23. \ 21$$

$$\text{The Apogæon of the Sun} \text{---} \text{---} 3. \ 5. \ 22. \ 23$$

$$\text{Aphelion of the Earth.} \text{---} \text{---} 9. \ 5. \ 32. \ 23$$

For the Eccentricity of the Earth in ſuch parts as her mean diſtance from the Sun is. 100000. the proportion is.

$$C S \text{---} \text{---} 10.000671$$

$$F S \text{---} \text{---} 8.237745$$

$$\text{Mean diſt. } 100000 \text{---} \text{---} 5.000000$$

$$\text{Eccentricity. } 1726 \text{---} \text{---} 3.237074$$

And for the Mean Anomaly in the third obſervation add the double of $F c S$ to the True Anomaly $F S c$. and ſo by conſequence the middle Motion either from the Aphelion or ~~Æquinox~~ is obtained in all the three obſervations.

But becauſe it is found by diligent obſervations of the Planets true places, eſpecially of Mars in his oppoſitions to the Sun, that the Elliptick Equation

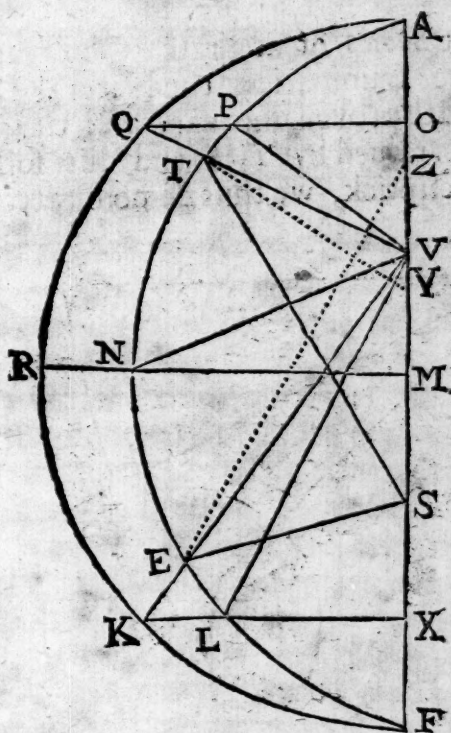
tion here used requires correction, we have applied an Angle at the Focus of middle motion, subtended by the part of the Ordinate line intercepted between the Ellipsis and Circle circumscribing it, which Angle we call the Variation; The best demonstration whereof is this, which I had from my ingenious friend Mr *Robert Anderson*.

Let $APNF$ be supposed the semi-ellipsis, and the semicircle $AQRF$ described upon the extrems of the transverse diameter, the Ordinates MN and OP being extended to R and Q in the Periphery of the circle, then by the 21 Prop. of the first of *Apollonius*,

$$MN:MR::OP:OQ.$$

Therefore,

$$MN:MR::\tan. OVP:\tan. OVQ.$$



But to find MN the Conjugate semidiameter of the Ellipsis, In the right Angled triangle MNV . NV the hypotenuse (equal to MR , or MA the Transverse semidiameter) and the side MV (equal to the Eccentricity) being given, (by the 47. of the 1. *Elem.*) the square root of the difference of their squares is MN .

And

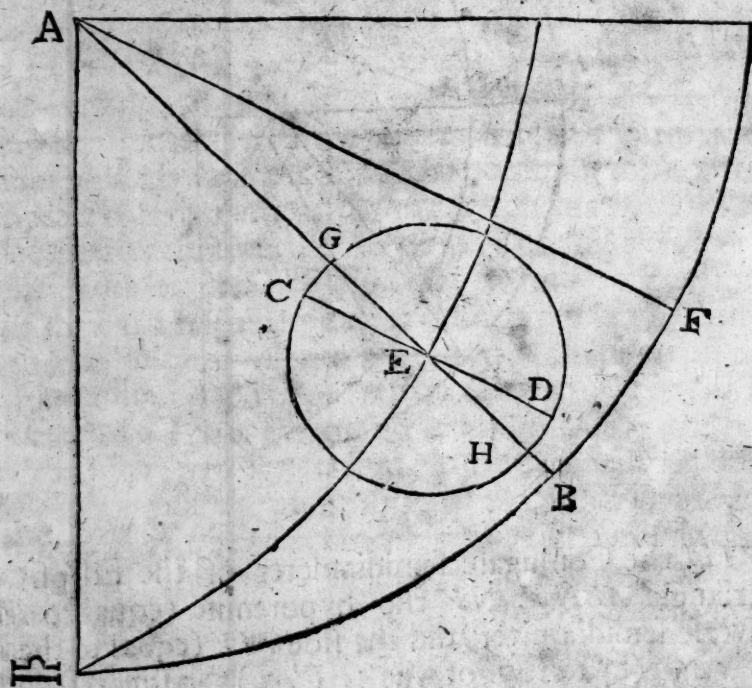
And supposing the Angle AVP the mean Anomaly, AVQ shall be the Corrected Anomaly, PVQ the variation, T the place of the Planet in the Ellipsis, and VTS the Elliptick æquation: Then drawing the prick'd line TT parallel to VP the line of Middle Motion, YTS shall be the Absolute æquation.

Or let AVL be the Mean Anomaly, AVK is the Corrected Anomaly, LVK the variation, B the place of the Planet, VES the Elliptick æquation, and (E Z being paralld to VL) ZES the Absolute æquation.

So that in the first and fourth quadrants of mean Anomaly the variation diminisheth, but in the second and third quadrants it increaseth the æquation of the Planet.

Of the Equation of Time.

BY the constant Series of accurate Observations of the Places and Eclipses of the Luminaries, the Natural Days (being the common measure of Time) are proved unequal; and the æquation is of two parts; That which is entertained by *Tycho* and his followers, arising from the obliquity of the Ecliptick, we thus demonstrate.



Let

Let A be the Center of the Sun, E the Center of the Earth, $\simeq E$ the Earth's Longitude from the $\text{\AE}quinoctial$ point in the Ecliptick , $\simeq F$ the like arch projected in the $\text{\AE}quator$, $\simeq B$ the right Ascension of the Earth's or Sun's true place, GH is a diameter of the $\text{\AE}quinoctial$ and Meridian of the Earth's apparent diurnal revolution, AB the semidiameter of the true Meridian and $\text{\AE}quinoctial$ supposed in the Heavens, and GH parallel to AB (though here they appeare as one right line; Then let CD parallel to AF be likewise a diameter of the $\text{\AE}quinoctial$ and Meridian of the mean or equal revolution. Hence CEG the Angle of the Earths Libration is equal to BAF the difference of Longitude and Right Ascension.

And this is the first part of our $\text{\AE}quation$ of Time.

The second part is from the Annual Inequality (whence the Earth being in her Aphelion her diurnal revolution is slowest, in her Perihelion swiftest) and is always equal to the Earths Annual $\text{\AE}quation$, which converted into time there needs no farther Demonstration of it.

And the sum or difference of these two parts is the Absolute $\text{\AE}quation$ of Time.

Of the Præcession of the $\text{\AE}quinox$.

BY comparing Antient Observations with Moderne, the Fixt Stars Longitudes from the $\text{\AE}quinoctial$ points are always found increasing, which (without manifest absurdity) can be determined no other wise than by the Præcession of the Earths $\text{\AE}quinoctial$; and it is not unlikely but the revolution of the Suns vortex (having most efficacy upon the point of the Earth which is next the Sun) is the principal cause of this slow revolution of the Earth upon her movable Ecliptical Poles contrary to the succession of the signs, as well as of the Annual revolutions of all the Planets in due proportion to their distances; and their diurnal revolutions being more peculiar to themselves, are yet remitted and intended by their greater and lesser distance from the Sun.

But this Motion of Præcession may be compared to that of a wheele, which by the revolution of the vortex, as of an other wheele gently touching its circumference, is slowly turned the contrary way.

And here observe that the Ecliptick and its Poles are fixt in the Heavens (though movable in the Earth) so that the Fixt stars Latitudes are always the same without any alteration;

But

But the *Æquinoctial* with the Poles thereof are fixed in the Earth and movable in the Heavens, as the *Præcession* of the *Æquinox* demonstrates: And the Inclination of the *Æquinoctial* to the *Ecliptick*, or the distance of their Poles is invariable and constant in all Ages, as by some select and more certain observations will easily appear.

Timocharis (as *Ptolomy* hath it in his *Almagest*) sets down the Virgins Spike more Northerly than the *Æquinoctial* $1^{\circ} 24'$. the year when it was so observed is unknown, but conjectured much about 300 years before Christ.

By the given declination North $1^{\circ} 24'$. the Latitude South 2° . and the Obliquity of the *Ecliptick* $23^{\circ} 30'$. the Longitude of the star is ϖ . $21^{\circ} 51'$. but by the observation of *Tycho* A. C. 1601 Current $\approx 18^{\circ} 15'$. whence the *Præcession* is in 1900 years $26^{\circ} 24'$. and in one year $50''$. But if the observation were made by the amplitude of the Star in the Horizon (which is as like as not) then (by reason of refraction) the true Longitude in the first observation is augmented and the motion of *Præcession* diminished.

In the *Persian* Tables rectified to the year of Christ, 1115. the Place of Spica is $\approx 11^{\circ} 40'$. whence to the time of *Tycho* in 486 years the motion is. $6^{\circ} 35'$. and the Annual *Præcession* $48'' 46'''$.

In the same *Persian* Tables, the last star in Pegasus wing is in $\approx 27^{\circ} 10'$. but by the observation of *Tycho*, 1601. φ . $3^{\circ} 37'$. whence the *Præcession* in 486 years is. $6^{\circ} 27'$ and in one year $47'' 47'''$.

We have also considered many other Observations Old and New; but in regard the more ancient Astronomers were destitute of convenient Instruments (as is evident by the discrepancy of their observations and by their manifest error in the greatest declination of the Sun) which is more easily observed than the declinations of the fixt stars) and because the error of $24'$ in declination amounts at least to one whole degree in Longitude; we have therefore (for want of better observations) made choice of some such applications of the Moon and Planets to Fixt stars (related by *Ptolomy*) as have most probability of truth, and comparing them with some other, limited the constant Annual *Præcession* of the *Æquinox* $48''$. the motion in 100 years $1^{\circ} 20'$. and one whole revolution thereof in 27000 years.

The true place of the Earths Aphelion with her Eccentricity and Middle motion determined.

THe Aphelions and Foci of the Middle motions of the Primary Planets are (as well as the Centers of the Sun and Fixt-Stars) Immoveable, the augmentation of their Longitudes being only the Præcession of the Æquinox; and that this is not barely the opinion of my self and some others, the Observations which shall be produced in their convenient place will sufficiently demonstrate; and hence the Sidereal years are always equal, but the Tropical years unequal.

Now by the method before used (but accounting the Earths longitudes from the Fixt stars, and correcting the intervals of middle motion by Variation and by the Æquation of Time) and otherwise by comparing many observations together we find the Constant Longitude of the Earths Aphelion from the first Star of Aries $8^{\circ} 8' 20''$ Her Eccentricity 1732 such parts as her mean distance from the Sun is 100000. and by the observation of *Tycho* 1596. *March* the 11th in the Meridian of *Uraniburg*, to the equal Time reduced to the Meridian of *London*, being *March* the 10th day 23h. 2' we determine the Earths Mean Anomaly thus.

	s.	°.	'.	''.
The Place of the Sun observed	7.	0.	33.	19
The Præcession of the Equinox.	0.	27.	27.	22
The Sidereal Longitude of the Earth	5.	3.	5.	57
The Place of the Aphelion	8.	8.	20.	0
The True Anomaly of the Earth	8	24.	45.	27
The Absolute Æquation substract	.	1.	58.	27
The Mean Anomaly	8.	22.	47.	00

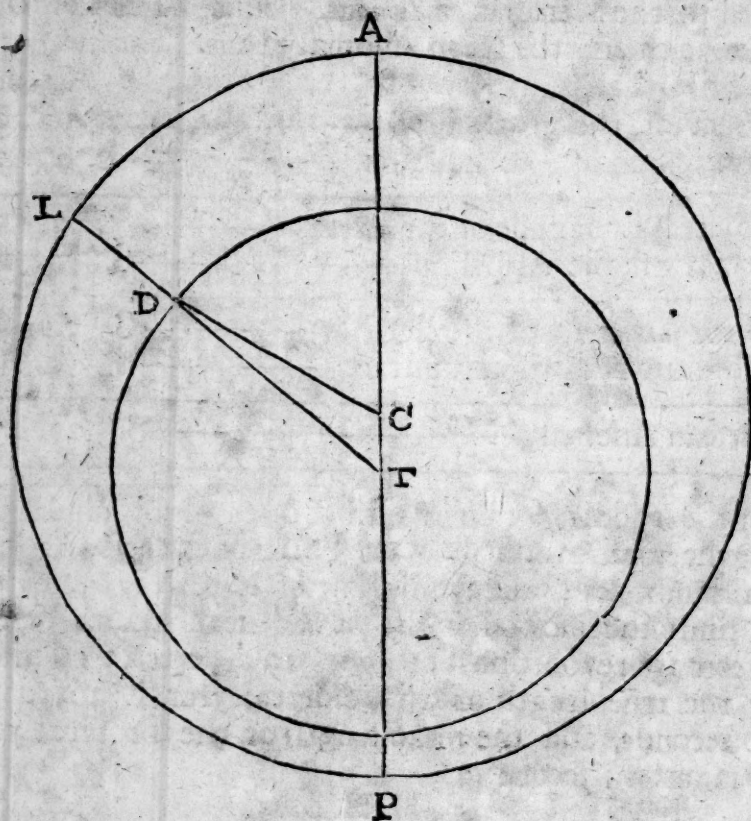
Then for the Middle Motion in distinct intervals of Time, we gather in like manner the mean Anomaly of the Earth to the best ancient observations of both Equinoxes; and from those of *Hipparchus* and *Albategnius* to *Tycho*, we limit the motion of the Earths mean Anomaly answerable to 20 Julian years 19 revolutions 11 signes 29 degrees 53 minutes 1 second. And hence the true length of the Sidereal year is 365 days 6 hours 8 minutes 30 seconds, and the mean length of the Tropical year 365 days 5 hours 49 minutes 1 second.

Of the Theory of the Moon.

THe Theory of the motion of this secondary Planet about the Earth differs in all respects from that of the primary Planets about the Sun, as well in her Eccentricity as her various Motions and Inequalities.

Now by the general consent of the most exact observations of *Gassendus*, *Langrenus*, *Ricciolus* and *Hevelius*, carefully made with the Telescope and otherways, the Moon being in σ or δ to the Sun, the difference of her Apogæon and Perigæon diameter is proved somewhat more then $4'$, and by those of *Hevelius* in Solar Eclipses (with due consideration of the Moons altitude in each observation) we determine the Apogæon diameter of the New or Full Moon in the Horizon. $28'. \frac{2}{3}$ ferè. and her Perigæon diameter in the like position $33'$. and hence her Eccentricity is near upon 71 such parts as her mean distance from the Earth is 1000 : for demonstration of which Eccentricity together with the first Inequality of the Moon;

Let the Circle *A L P* denote the Eccentrick, the Center thereof *C* the point to which the Middle-motion is referred, *T* the Center of the Earth, the concentrick lesser Circle the Æquant, *C T* the Eccentricity.



And

And let AT the Apogæon distance, TP the Perigæon distance, and DT the semidiameter of the $\mathcal{A}$ quant, be in continual proportion. Then supposing the Moon in L , the right line TL cutting the $\mathcal{A}$ quant in D , the Angle ACD shall be the Mean Anomaly, CDT the $\mathcal{A}$ equation, and ATD the true Anomaly.

To find the Apogæon and first Inequality of the Moon by three Lunar Eclipses.

A*T Bononia in Italy* (whose longitude we determine just 13 degrees to the *East* from the Meridian of *London*) by the accurate observations of *Ricciolus* and others, the Apparent Times of the Middle of three Lunar Eclipses were as followeth. The first 1642. *April* the fourth, 14 hours 44 minutes; the second, the same year, *September* the 27th 16 hours 46 minutes; and the third 1643. *September* the 17th, 7 hours 31 minutes. The Equal times reduced to the Meridian of *London*, with the places of the Sun in these three Observations (by our former demonstration) are thus.

Anno.	Mens.	die.	ho.	'	S.	°	'	"
1642.	April.	4	13	37	♊	25	6	54
1642.	Sept.	27	15	57	♋	14	50	9
1643.	Sept.	17	6	46	♌	4	20	20

Hence the place of the Moon in the first Observation is $\approx 25^{\circ} 6' 54''$ in the second $\approx 14^{\circ} 50' 9''$ in the third $\approx 4^{\circ} 20' 20''$.

Then let the Circle $BHDGFE$ denote the Moons $\mathcal{A}$ quant, T the Center of the Earth, the semidiameters TD , TE and TF the apparent places of the Moon in the first, second and third Observations, C the Center of the Eccentrick, CD , CE , CF the lines of Middle Motion.



The Motion of the True Anomaly is the Arch $D E$.—150 6 7
 The Motion of the Mean Anomaly (rejecting Circles) $D C E$.—140 42 28

The Motion of the True Anomaly is the Arch DF . ————— 100 5 54
 The Motion of the Mean Anomaly the Angle DCF . ————— 93 46 43

There-

(49)

Therefore the Arch FE is $50^{\circ} 0' 13''$
And the Angle FCE $46^{\circ} 55' 45''$

Then suppose the Logarithm of DC 10.000000. Continue FC to H , and with the other right lines compleat the Diagram.

1. In the Triangle DCH are given DCH the Complement of DCF to a semicircle. DHC the half of DTF the Angle at the Center and DC as above. Required CH .

DHC .	$50^{\circ} 2' 57''$.	fin.	—	9.	884566
HDC .	$43^{\circ} 43' 46''$.	fin.	+ DC	19.	839638
CH .				9.	955072

2. In the Triangle HCE are given CH , $CH E$ the half of FTE , HCE the Complement of FCE . Required CE .

CEH .	$21^{\circ} 55' 38''$.	fin.	—	9.	572208
CHE .	$25^{\circ} 0' 6''$.	fin.	—	9.	625975
CH .				9.	955072
				19.	581047
CE .				10.	008839

3. In the Triangle DCE are given DC , CE , DCE . Required $CE D$ DE .

$CE + \text{rad}$:	DC .				
	$45^{\circ} 34' 59''$.	tan.	—	10.	008839
Rad:	$0^{\circ} 34' 59''$.	tan.	—	8.	007602
	$19^{\circ} 38' 46''$.	tan.	—	9.	552657
	$0^{\circ} 12' 29''$.	tan.	—	7.	560259
$CE D$	$19^{\circ} 26' 17''$.	fin.	—	9.	522167
DCE .	$140^{\circ} 42' 28''$.	fin.	+ DC .	19.	801593
DE .				10.	279426

2. In the Isosceles Triangle DTE are given DE , DTE . Required DT . And from the Angle CDE subtract TDE , there is left CDT .

DTE .	$150^{\circ} 06' 07''$.	fin.	—	9.	697629
DET .	$14^{\circ} 50' 56''$.	fin.	—	9.	411548
DE .				10.	279426
				19.	690974
DT .				9.	993345

5. In

5. In the Tringle CDT are given DC, DT, CDT . Required CTD , CT .

DC + rad.	20.000000
DT	9.993345
$45^\circ 26' 20''$. tan.	10.006655
	.ft.
Rad. 0 26 20. tan.	7.884240
87 32 50. tan.	11.368199
10. 8 20. tan.	9.252439
CTD . 97 41 10. fin.	9.996081
CDT . 4 59 19. fin. + rad.	18.932010
CT .	8.935929

	S	°	'	"
The Place of the Moon in the first Observation.	6	25	6	54
The True Anomaly CTD subtract.	3	7	41	10
The Place of the Apogæon.	3	17	25	44
The Equation CDT . Adde.	0	4	54	19
The middle Longitude of the Moon.	7	0	1	13
The Mean Anomaly BCD .	3	12	35	29

And for the Eccentricity in such parts as the Radius of the Æquant is 100000. make this proportion.

DT	9.993345
CT	8.935929
100000	5.000000
8762	3.924584

But by these and many other Eclipses as well Solar as Lunar, (with respect to the Moons reduction) we limit the longitude of the Apogæon more, and the Mean Anomaly less by about $21'$, and supposing DT 100000. we have stated CT 8765. of the same parts.

Then, In three continual Proportionals, the Lesser Extream with the difference of the Mean and Greater Extream being given, to find the Mean, &c. My much esteemed Friend Mr Robert Anderson doth it thus.

Let there be three numbers B, C, A . Let B be equal to the Lesser Extreme, C the difference of the Mean and Greater Extream, and A the Mean.
Then

Then $A + C$ is the Greater Extreme, which multiplied by B , the product is $AB + CB$ (by the 20. of the 7.) equal to the square of A , the Equation $AA = AB + CB$. And for the resolution, To the square of half B add the multiplex of C in B , and to the square root of the sum add the half of B , It shall be equal to the Mean Proportional.

Now in the first of the two preceding Diagrams, the Lesser Extreme DT being supposed 100000. the difference of the Mean TP and the Greater Extreme AT is the double of CT . 17530. and hence (by the work) TP is 115211. to which adding CT . 8765. the sum is CP . 123976. the semidiameter of the Moons Eccentric, or her mean distance from the Earth.

But in such parts as the mean distance is 100000. the Eccentricity is 7070. the Apogæon distance 107070. the Perigæon distance 92930. and the semidiameter of the Æquant 80657.

Of the second Inequality of the Moon.

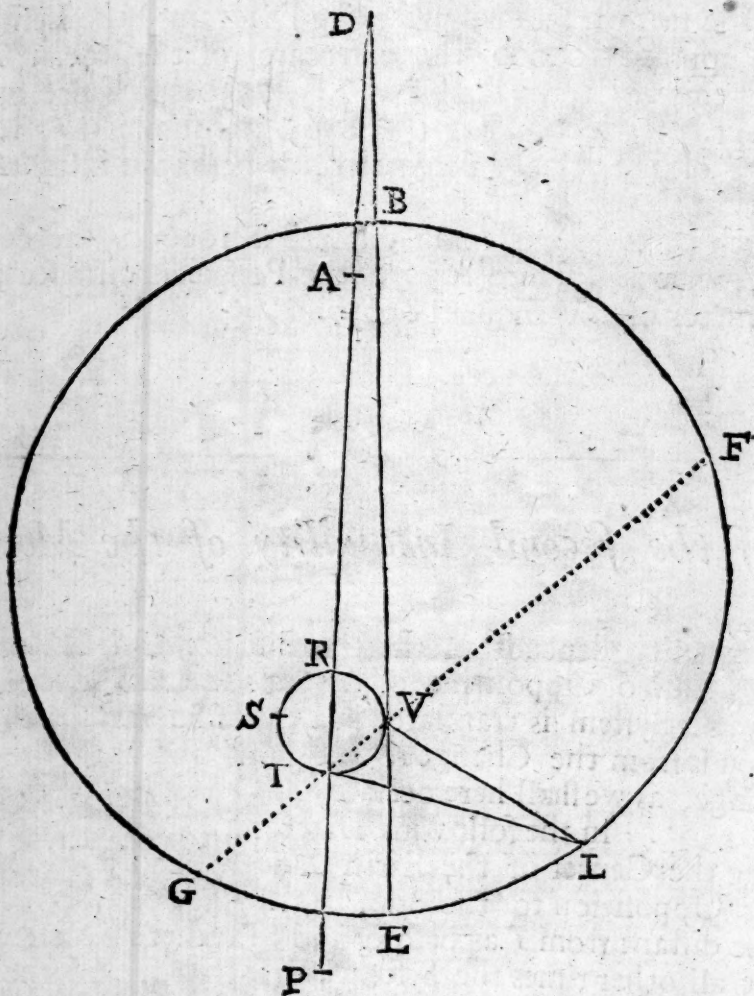
THis Inequality depends on the true distance of the Moon from the Conjunction or Opposition of the Sun, so that the Moon together, with her whole System is translated in a two-fold menstrual revolution, whose period is from the Change to the Full, and again from the Full to the Change, as we shall here declare.

In the following Diagram,

Let T denote the Center of the Earth; and when the Moon is in Conjunction or Opposition to the Sun, A the Apogæon and P the Perigæon shall be distant from T as before, and then there is no second Inequality; but at all other times the System is translated, and the Moon passing from the Conjunction or Opposition of the Sun to the Quadrature, the point which was before in T describeth the semicircle TVR , and likewise from the Quadrature to the Conjunction or Opposition the other semicircle RST ; the motion of the said point being always double to the true first æquated motion of the Moon from the Sun.

Now

Now in the removed System, Let the Arch TV of the little Circle be equal to the double distance of the Moon from the Conjunction or Opposition of the Sun, the Chord TV extended to F and G , the Moon



placed in L , BVL the complement of the true Anomaly, VB equal to TA and VL to the distance of the Moon from the Earth in the untranslated System; Continue VB and TA , let them meet at D and let VD be of a constant known proportion, Then shall FVL denote the Complement of the Synodical Anomaly, $VL T$ the Reflection, TL the true place and distance of the Moon from the Earth.

And

And in this example, the sum of the Evection and Reflection (because they both add) is the absolute Secondary Equation, and so if they both subtract; but otherwise, if the one add and the other subtract its their difference.

The greatest Angle of Evection subtended by the diameter *RT* in the Quadratures is according to our most expert modern Astronomers about $2^{\circ}.30'$. or half the first Inequality, and the greatest Reflection in the Octants by *Tycho* and *Bullialdus*. $40'.30''$. But before we come to determine the just proportion of either, it will not be impertinent to our purpose to make some inquisition.

Concerning the Moons Parallax.

Anno 1639. May the 22th. 6 ho. 10'. 27". was the Apparent Time of the end of a Solar Eclipse observed at *London*. the Equal Time is 9 ho. 6'. 37". the True place of the Sun. $\Pi 10^{\circ}.49'.28''$; and by our ultimate correction,

	s	°	'	"
The mean Anomaly of the Moon. —————	2.	25.	59.	55
The Equation subtract. —————	0.	5.	0.	59
The True Anomaly. —————	2.	20.	58.	56
The Apogæon —————	11.	20.	59.	30
The Place of the Moon first Equated —————	2.	11.	58.	26
Distance of the Moon from the Sun —————	0.	1.	8.	58

Hence (by the best computation) the secondary Equation is nearest $1'$, and the reduction (the Moon being 7° in antecedence from Ψ) $1'.35''$. both to be added, and so the true place of the Moon in the Ecliptick is $\Pi.12^{\circ}.1'$. her true distance from the Sun $1^{\circ}.11'.32''$.

The Semidiameter of the Sun (as we gather by the Observations of *Hervelius* and others) is $15'.40''$. the Semidiameter of the Moon (according to her Anomaly and Altitude) $15'.17''$. the Aggregate of Semidiameters. $30'.57''$. which (because the Visible Latitude of the Moon was then little or nothing) is the observed distance of the Moon from the Sun in Longitude, but the true distance was. $1^{\circ}.11'.32''$. and therefore the Parallax of the Moon from the Sun in Longitude $40'.35''$.

The distance of the Sun from the Vertex was. $74^{\circ}.25'$. the Angle of the Vertical circle with the Ecliptick $41^{\circ}.48'$. which gives the Parallax of the Moon from the Sun in Altitude. $54'.26''$ the Parallax of the Sun $14''$ added, the Parallax of the Moon in Altitude is $54'.40''$. and hence

the Semidiameter of the Earth will be 1665 such parts as the mean distance of the Moon is 100000.

Otherwise in finding the proportion of the Earths semidiameter or subtruse of the Moons Parallax by the observed duration and digit of a Lunar Eclipse, the inequality and inconstancy of the Earths shadow, with the uncertain limits of the Umbra and Penumbra are considerable impediments; and therefore to obtain the true Parallax of the Moon, with the place of her Nodes, we have compared several exact Telescope-observations of her visible Latitudes in Solar Eclipses, with some central conjunctions of the Luminaries; and finally, to the mean distance of the Moon from the Earth 100000. We have stated the Earths semidiameter. 1650. of which, with the Moons Latitude, we shall anon give a farther account.

For the Evection of the Moon in the Quadratures.

Longomontanus in *Lib. 1. Theoric. Cap. 6* relates a notable conjunction of the Moon with Aldebaran or the Southern Eye of the Bull, observed at *Hafnia* in *Denmark*, Anno, 1608 Febr. the 12th day, 8 hou. 43'. *T. A.* at *Wittenberg* in *Saxony* 8 hou. 46'. he also computes the Moons true Altitude $39^{\circ} 45'$ and her visible altitude at *Hafnia* when the upper horn of the Moon appeared in the same Longitude and Latitude with the Star about 39° . and hence the apparent Time ought to be 8 hou. 36'. but the equal time at *London* 7 h. 48'. The true place of the Sun was then by our Tables, $\times 3^{\circ} 38'. 6''$. the mean Anomaly of the Moon $8^{\circ} 18' 41'. 34''$. the place of the Moon first Æquated. $\Pi. 2^{\circ} 7'. 30''$. her distance from the Sun $2^{\circ} 28'. 29'. 24''$. The place of the star $\Pi 4^{\circ} 17'. 12''$. with Latitude South $5^{\circ} 30'$. distance from the vertex of *Hafnia* $50^{\circ} 53'$. angle of the Vertical with the Circle of Latitude $38^{\circ} 58'$. the Parallax of the upper horn of the Moon in Altitude. $44'. 35''$. in Longitude. $28'. 9''$. in Latitude. $34'. 40''$. therefore the true place of the Moon observed, $\Pi 4^{\circ} 45'. 21''$. the argument of Latitude was $9'. 11''. \text{ferè}$, the reduction subtract $2'. 45''$. the place of the Moon in her orbite. $\Pi 4^{\circ} 42'. 36''$. from which subtract her place first æquated $\Pi 2^{\circ} 7'. 30''$. there remains the whole second inequality $2^{\circ} 35'. 6''$. and because the first æquated Place of the Moon wanted $1^{\circ} 30' 36''$. of the Quadrature, the Reflection was $2'$. and the angle of Evection. $2^{\circ} 33'. 6''$. but supposing the time of the observation 8 hou. 43'. (as above) the Evection will be found less by about. $3'$. but comparing this with many other exact observations we thus conclude:

The

The Quantity of the Evection and Reflection limited.

THE Eccentricity of the Moon in Conjunction or Opposition to the Sun being (by the 11th of the 2. cut according to Extreme and mean proportion, the greater segment shall be the diameter of the Circle of Evection.

Now supposing the semidiameter of the Moons Eccentrick, 100000. we have determined the Eccentricity in the New and Full Moons 7070. the square thereof is. 49984900. the half of 7070. is 3535. squared 12496225. the sum of the squares. 62481125. the square root of the sum is nearest. 7904. $\frac{1}{2}$ from which subtract. 3535. there is left. 4369. $\frac{1}{2}$. which in the last Diagram denotes TR the diameter of the little Circle. and hence in the observation last mentioned the angle of Evection is. $2^{\circ} 31' 40''$. but the greatest Evection in the Quadratures. $2^{\circ} 30' 16''$. And in the same Diagram (by Tycho's observations of the Moons place in the 90th degree of the Ecliptick, with several applications to Fixt Stars observed since with the Telescope) in the triangle VDT we state the constant side VD equal to AP or BE the diameter of the Eccentrick, and therefore the greatest Reflection. $37' 33''$. in the Octants.

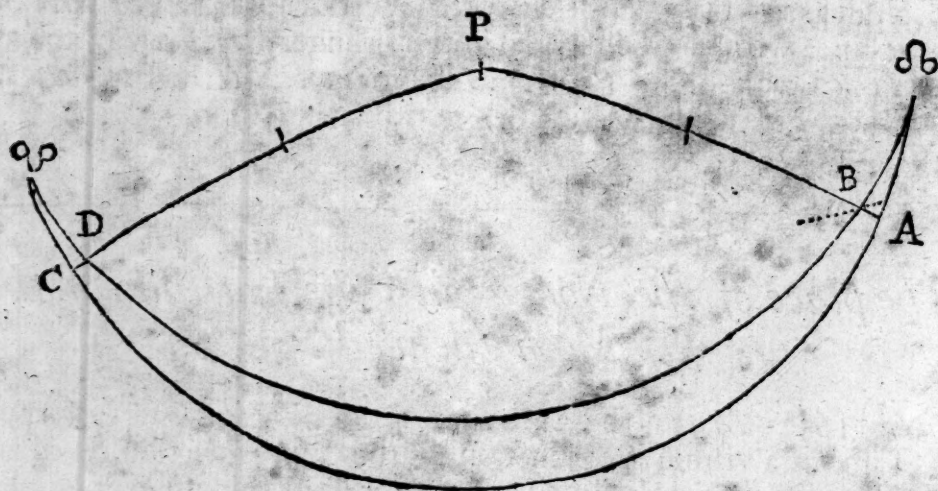
The place of the Nodes with the Latitude of the Moon defined.

ANno 1652 March the 28th day 22 hours 30'. was the Apparent Time of a visible Conjunction of the Luminaries observed at London, the digits of the Sun Eclipsed were 11 or some thing more on the North part, at Paris by some observations which we count nearest truth, almost $10\frac{1}{2}$ and therefore at London, as near as we can gather 11 dig: 18. m. the Equal Time was 22 hou. 16'. the place of the Sun γ . $19^{\circ} 11' 33''$. his distance from the Vertex $47^{\circ} 41'$. the Angle of the Vertical circle with the Ecliptick $86^{\circ} 25'$. the mean Anomaly of the Moon. $7^{\circ} 11' 53' 48''$. the semidiameter of the Sun $15' 52''$. of the Moon $16' 21''$. the Aggregate $32' 13''$. which with the digits 11. 18' gives the Latitude of the Moon seen. $2' 20''$. but supposing the semidiameter of the Earth 1650 parts, as before, the pa-

rallax of the Moon from the Sun was in altitude $44'. 0''$. in Longitude $2'. 45''$. in Latitude $43'. 55''$. and hence the true place of the Moon. $\Upsilon 19^\circ. 14'. 18''$. with Latitude North $46'. 15''$.

Anno 1654. August the 1 day. 21 hou. 4 $\frac{1}{2}$ ' T A. by observation was the middle of another Solar Eclipse at *London*. the Equal Time was 21 hou. 19 $\frac{1}{2}$ '. the place of the Sun $\Omega. 19^\circ. 33'. 38''$. his distance from the Vertex $50^\circ. 32'$. the Angle of the Vertical circle with the Ecliptick $37^\circ. 43'$. the mean Anomaly of the Moon $8s. 5^\circ. 0'. 47''$. the semidiameter of the Sun $15'. 43''$. of the Moon $15'. 56''$. the aggregate $31'. 39''$. and by comparing several observations we determine the digits Eclipsed 10. 16'. and hence the Latitude of the Moon seen $4'. 45''$. North. but her parallax from the Sun was in altitude $44'. 48''$. in Longitude. $35'. 26''$. in Latitude. $27'. 25''$. and therefore the true place of the Moon $\Omega 18^\circ. 58'. 12''$. with Latitude North $32'. 10''$.

From the first observation to the second, the difference of the Moons true Longitude is $119^\circ. 43'. 54''$. the true motion of the Nodes in the Interval $45^\circ. 17'. 10''$. to be added, the sum is the Angle $B P D$, $165^\circ. 1'. 4''$.



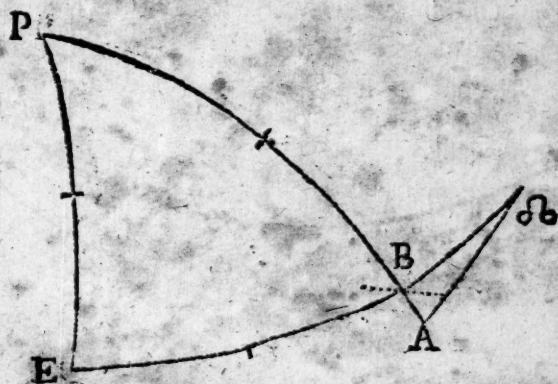
also the Complement of the Moons Latitude in the first observation is $B P. 89^\circ. 13'. 45''$. in the second $D. P. 89^\circ. 27'. 50''$. by which three termes in the Triangle $B P D$. there is given my operation $P B D. 85^\circ. 3'. 30''$. and in the Triangle $B. A. \Omega$ by the right angle at A with $A. B. \Omega$. equal to $P B D. 85^\circ. 3'. 30''$. and $A B. 46'. 15''$. the Latitude in the first observation, ΩA is $8^\circ. 50'. 38''$ the Longitude of the Moon from the ascending Node, and

and $A\Omega B$ $5^{\circ}.0'.5''$. the Angle of her Orbit with the Ecliptik. Then from the first observed place of the Moon γ . $19^{\circ}.14'.18''$. subtract $88^{\circ}.50'.38''$ there remains the true place of Ω . γ . $10^{\circ}.23'.40''$. but we shall examine the quantity of the angle $A\Omega B$ by one greater Latitude.

Anno 1645. the night following the last day of April, at Bononia in Italy, Ricciolus observed the visible meridional distance of the Moons center from the vertex, corrected by his refraction $58^{\circ}.53'$. whence the distance from the vertex seen was $58^{\circ}.51\frac{3}{4}'$. wherein we allow no sensible refraction.

The exact time of the Moons coming to the Meridian of Bononia was 12 hou. 14' *ferè*. the equal time at London 11 hou 6'. The place of the Sun by our Tables. $8^{\circ}.20'.27'.38''$. the mean Anomaly of the Moon $11^{\circ}.29'.47'.27''$. her true Longitude in her Orbit. $7^{\circ}.22'.32'.22''$. reduced to the Ecliptick $7^{\circ}.22'.32'.3''$. her parallax in altitude at Bononia $45'.21''$. the Latitude of the place by the observation of Ricciolus $44^{\circ}.29'.30''$. therefore the declination of the Moon south $13^{\circ}.36'.54''$. which with her true place gives her Latitude North $4^{\circ}.59'.53''$.

But Anno 1652. March 28th day 22 hou. 16'. T.M. at London, the place of the Moon in her orbit was $0^{\circ}.19'.16'.19''$. with Latitude North $46'.15''$. the difference of Longitudes in the orbit $213^{\circ}.16'.3''$. the Equated motion of the Nodes in the interval subtract $133^{\circ}.33'.38''$. there is left EB in the Moons orbit. $79^{\circ}.42'.25''$.



And the Complements of Latitudes are EP . $85^{\circ}.0'.7''$. and PB . $89^{\circ}.13'.45''$. by which three sides we find the Angle PBE equal to $AB\Omega$. $85^{\circ}.3'.36''$. and hence in the Triangle $AB\Omega$ with the side AB $46'.15''$. and

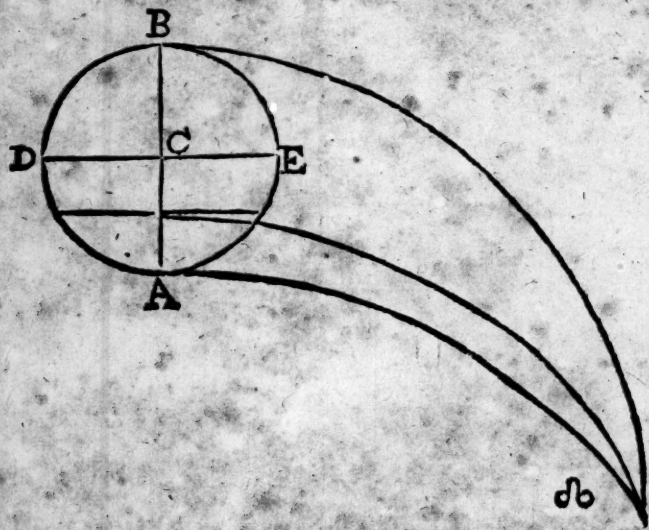
and the right angle $B A \odot$ the Hypotenuse $\odot B$ is $8^{\circ} 52' 49''$. the argument of Latitude, or the distance of the Moon from $\odot$, the side $\odot A$ $8^{\circ} 50' 49''$. her distance reduced to the Ecliptick, and the angle $A \odot B$ $4^{\circ} 59' 59''$. the Inclination of her Orbite.

By these with other Observations we determine the greatest Latitude of the New or Full Moon exactly 5° . and the place of $\odot$ (without sensible difference) as before.

Of the Excess of the Moons Latitude above 5 degrees.

IN the Observation of Longomontanus. 1608. Febr. the 12th &c. before mentioned, in regard it was made by the bare eye, we allow $1'$ or something more for the dilatation of light, and conclude the visible Latitude of the Moon $5^{\circ} 47'$. *ferè*, but her true Latitude corrected by parallax. $5^{\circ} 12' \frac{1}{4}$ by which and the argument of Latitude. $98. 10^{\circ} 54' 39''$. her greatest Latitude in the Quadratures is $5^{\circ} 18'$.

Then let AB the diameter of the little circle, AEB be the Chord of $18'$, $\odot$ the place of the Node; $\odot A$ in the New and Full Moons, and $\odot B$ in the Quadratures are quadrants of the Moons Orbite.

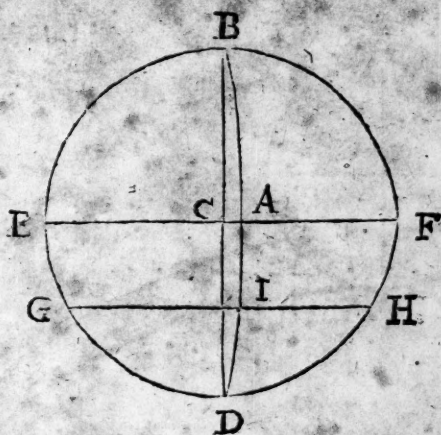


And

And for the greatest Latitude at all times, account the double distance of the Moon (as in the Eviction) from the conjunction or opposition of the Sun from A by E to B &c. a perpendicular falling thence upon AB gives the proportion, as the radius to C A or C B the sine of $9'$, so the co-sine of the double distance of the Luminaries, to the sine of the difference of Latitude from C ; which in the upper semicircle EBD added, in the lower semicircle DAE subtracted, to or from $5^\circ, 9'$ the Latitude of C . gives the greatest Latitude of the Moon, or the Inclination of her Orbit at that time.

Of the Inequality of the Nodes.

T*rcho* by comparing many observations together, besides the second part of the secondary Equation of the Moon, with the Excess of her Latitude, which are sufficiently proved, admits of a variation of about $9'$ in Latitude near the Nodes; which best agreeing with some Applications of the Moon to fix stars, observed since by *Gassendus* and *Bullialdus*, we thus easily demonstrate in like manner as the Excess.



Let the arch DAB be $3^\circ, 30'$ of the Ecliptick, and the Chord thereof DB the diameter of the Circle $BEDF$, the other diameter EF cutting DB at right angles and the Ecliptick in A . Then numbring the double Motion of the Moon from the Sun (as before) from E by D to F to B and again to E ;

E, if it fall in *E* or *F*, the Node is in *A* and free from Inequality; but in *D* or *B*, the Node is there with it, and then is the greatest æquation *AD* or *AB* $1^{\circ}.45'$. and in any other point (as *G* or *H* &c.) a Chord drawn thence and Parallel to *EF* shall cut the Ecliptick in the place of the Node, and the arch intercepted (as *AI*) shall be the Equation. Therefore, as the radius to *CD* or *CB* the sine of $1^{\circ}.45'$. so the sine of the double distance of the Moon from the Sun, to the sine of the æquation; which in the former semicircle *EDF* subtracteth from, in the latter semicircle *FBE* addeth to the mean or Equal place of the Node.

The Middle Motions of the Moon determined.

THe method of finding the Apogæon with the mean Anomaly and place of the Nodes being already declared; to avoid tediousness, we shall not here reiterate the work by ancient observations, but by as many as are extant of Lunar Eclipses, those especially of greatest antiquity, diligently compared amongst themselves and with modern; in the space of 4 Julian years or 1461 days, we limit the mean Anomaly or middle-Motion of the Moon from her Apogæon, 53 revolutions, 0 Sign, 7 degrees, 56 minutes, 45 seconds; The Apogæon from the æquinox 5 Signs, 12 degrees, 46 minutes, 0 seconds; The Nodes retrograde, 2 signs, 17 degrees, 22 minutes, 6 seconds, and the rest as in our Tables and former Calculation.

Of

Of the Primary Planets,

♄ ♃ ♀ ☉ ♁ ♂.

*The Proportion of their Orbes to the Periods
of their Revolutions.*

Keppler hath proposed the mean distances of *Saturn*, *Jupiter*, *Mars*, the *Earth*, *Venus* and *Mercury* from the *Sun*, in Sefquialter Proportion to the Periods of their Revolutions in Time; which though himself and some others since have not fully asserted in their Tables, yet with the Corrected Parallax of the *Sun* and *Æquation* of the *Earth*, it proves most consentaneous unto observation and altogether indubitable.

According to which proposition and our following methodical limitation, the Periods of the Sidereal-Revolutions with the Mean-distances of these Planets from the *Sun* are thus.

	Revolutio.					Dist. Med. à ☉
*	d	h	'	"		
♄	10759	6	36	26		953800
♃	4332	12	20	25		520110
♀	686	23	27	30		152369
☉	365	6	8	30		100000
♁	224	16	49	24		72333
♂	87	23	15	53		38710

For Example, The Period of the Revolution of the *Earth* reduced into minutes of time, being $525968.\frac{1}{2}$. and of *Mars*. $989247.\frac{1}{2}$. I say, as the square of. $525968.\frac{1}{2}$. to the square of. $989247.\frac{1}{2}$. so the Cube of 100000. the mean distance of the *Earth*, to the Cube of 152369. the Mean distance of *Mars*. or by artificial numbers,

K

 $525968.\frac{1}{2}$

525968 $\frac{1}{2}$	Log. 5. 720960	dupl. 11. 441920	} Proport.
989247 $\frac{1}{2}$	Log. 5. 995305	dupl. 11. 990610	
100000	Log. 5. 000000	tripl. 15. 000000	
152369	Log. 5. 182897	tripl. 15. 548690	

And so of the rest. The like proportion is upon good grounds assigned to the four Satellites about *Jupiter*, is their secondary Revolutions and distances from him.

But otherwise to examine the proportion of the Orbes of the superior Planets to the Earths; after our next following inquisition, it may be so easily performed by one observation of a Planet *extra situm Acronychium*, that we leave it to the Readers discretion; and of the Inferiors, you have it in its proper place.

To find the Aphelions and Eccentricities of the three Superior Planets γ η δ .

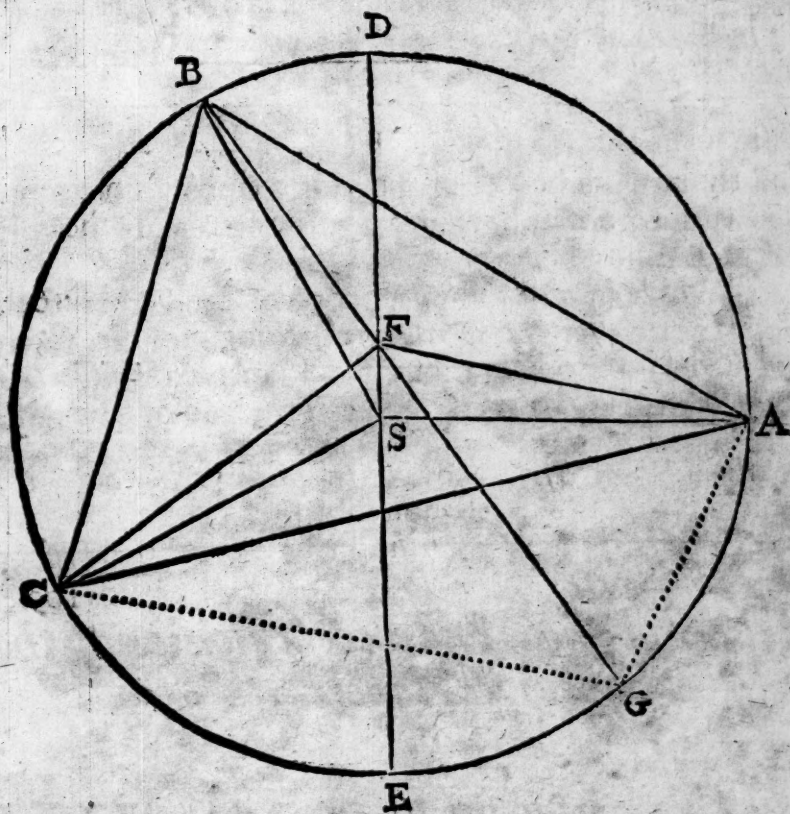
BY three Acronychial positures observed, the work is the same as in finding the Annual Inequality of the Earth, but for farther illustration thereof, take this example.

The Equal Times of three Oppositions of the *Sun* and *Mars* reduced to the meridian of *London*, with the Longitudes of *Mars* from the first Star of *Aries*, by the accurate Observations of *Tycho Brabe* were these.

Anno.	Mens.	die.	ho.	'	S	°	'	"
1580.	Nov.	18	0	37	1	0	8	41
1587.	Martii.	6	6	27	4	28	17	45
1591.	Junii	8	6	51	7	29	14	8

Let *S* denote the Center of the *Sun*, *F* the other Focus of *Mars*, the semidiameters of the Circle *S A*, *S B*, *S C* being equal to the transverse diameter of his Ellipsis and passing by his places in the first, second and third Observations, the right lines *F A*, *F B*, *F C*. drawn, *B F* continued to *G*, and the Diagram completed.

From



From the first Observation to the second,

	°	'	"
The Apparent motion of <i>Mars</i> is the Arch AB	109	9	4
The middle motion in the Interval (rejecting Circles)	124	52	59
The Sum	234	2	3
The half thereof is the Angle AFB	117	1	2

From the second Observation to the third,

	°	'	"
The Apparent motion of <i>Mars</i> is the Arch BC	90	56	23
The middle motion in the Interval	94	52	58
The Sum	185	49	21
The half thereof is the Angle BFC	92	54	40
K 2			There-

Therefore the Arch CA is 159 54 33
 And the Angle CFA 150 4 18

Then supposing the Logarithm of CF 10.000000

1. In the Triangle CFG, are given CFG the Complement of BFC to a semicircle, CGF the half of BSC the Angle at the Center, and CF as above. Required FG.

FGC. $45^{\circ} 28' 11''$. fin. 9.853016
 FCG. $47 26 29$. fin. + CF. 19.867223
 FG. 10.014207

2. In the Triangle FGA, are given FG, FGA, the half of BSA GFA complement of BFA, Required FA.

FAG. $61^{\circ} 26' 30''$. fin. 9.947698
 FGA. $54 34 32$. fin. 9.911094
 FG. 10.014207
19.925301
 FA. 9.977603

3. In the Triangle CFA, are given FA, CF, CFA. Required FAC CA.

CF + Rad. 20.000000
 FA 9.977603
46^{\circ} 28' 36''. tan. 10.022397
 Rad: $1 28 36$ tan. 8.411256
 :: $14 57 51$. tan. 9.426965
 : $0 23 41$. tan. 7.838221
 FAC. $15 21 32$. fin. 9.423023
 CFA. $150 4 18$. fin. + CF. 19.698028
 CA. 10.275005

4. In the Isosceles Triangle CSA, are given CA, CSA. Required CS. And from the angle FCA subtract SCA, there is left FCS.

CSA.

(65)

CS A.	20° 5' 27" fin.	9.535939
SAC.	10 2 43, fin.	9.241612
CA.		10.275005
		19.516617
CS.		9.980678

5. In the Triangle FCS, are given CF, CS, FCS. Required FSC, FS

CF. + Rad.	20.000000
CS.	9.980678
46° 16' 27". tan.	10.019322
Rad: 1 16 27. tan.	8.347175
: : 87 44 17. tan.	11.403415
: : 29 23 3. tan.	9.750590
FSC. 117 7 20. fin.	9.949408
FCS. 4 31 27. fin. + CF.	18.896664
FS.	8.947556

	S . 1 11
The place of <i>Mars</i> in the third Observation	7 29 14 8
The true Anomaly FSC subtract	3 27 7 20
Refts for the Aphelion	4 2 6 48

The equation or double of FCS, add to FSC	0 9 2 54
The sum is the mean Anomaly in the third Observation	4 6 10 14

And subtracting the Intervals, the Mean Anomaly in the second Observation is 1° 1° 17' 16". in the first 8° 26° 24' 17".

For the Eccentricity proport.

CS.	9.980678
FS.	18.947556
Mean dist. 152369	5.182897
Eccentricity. 14118	4.149775

And

And the square root of the difference of the squares of the mean distance and Eccentricity is the Conjugate semidiameter of the Ellipsis 151714 *ferè* the Logarithm thereof 5. 181025.

Then as the Conjugate semidiameter, to the mean distance, or Transverse semidiameter, so the Tangents of mean Anomaly, to the Tangents of correct Anomaly; whence, in the first Observation, the Anomaly correct by variation is $8^{\circ} 26' 25'' 13''$. In the second $1^{\circ} 1' 23' 41''$. In the third $4^{\circ} 6' 3' 10''$.

Therefore, applying the Intervals of correct Anomaly as before of middle motion it will be,

Arc.	°	'	''	Ang.	°	'	''
AB.	109	9	4	AFB.	117	3	46
BC.	90	56	23	BFC.	92	47	56
CA.	159	54	33	CFA.	150	8	18

With which Arches given at first, but corrected Angles, repeating the Work.

	S	°	'	''
The true Anomaly in the third Observation FSC is—	3	27	55	37
The place of the Aphelion—	4	1	18	31
The Elliptick Equation, or double of FCS —	0	8	56	58
The Variation —	0	0	7	4
The absolute Equation —	0	9	4	2
The Mean Anomaly —	4	6	59	39

And the Eccentricity 14080. parts.

For

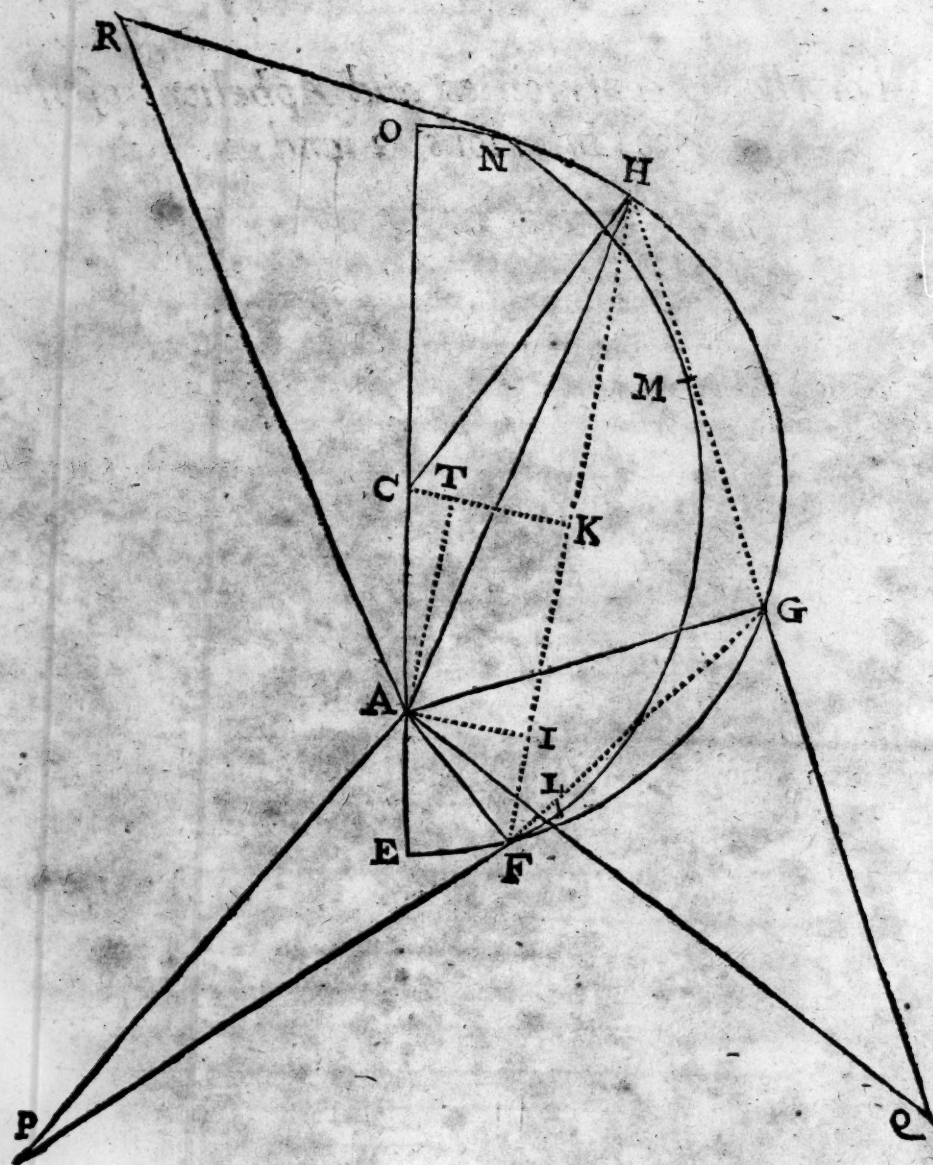
*For the Eccentricities and Aphelions of the
two Inferiors ☿ and ♄.*

WE shall here follow and recommend to publick use the ingenious invention of the noble Lord of *Belna*, who most Artificially Demonstrates the proportion of the Orb with the Excentricity. &c. of either of these Planets by three greatest Elongations from the Sun, as it was first published at *Paris*, Anno 1641 by *Morinus*, and afterwards by the learned *Bullialdus* in his *Astronomia Philolaica*, Lib. 11. pag. 408 and 409, where he unhappily mistakes the Demonstration as misapplied and to concludes with a Paralogism of his own; but to leave this and go on with our purpose:

Of three greatest Elongations of *Mercury* (gathered from the Observations of *Gassendus*, and the last by his true distance from *Venus*.) The Equal times reduced to the Meridian of *London*, the Sidereal Longitudes of the Earth, the Logarithms of her distances from the Sun and the Elongations of *Mercury* were these;

<i>Anno. Mens. Die. ho. '</i>	<i>Locus. ☉.</i> S ° ' "	<i>Log. dist. a☉</i>	<i>Elong. Max. ☿ Obs.</i> ° ' "
1634. Sept. 23. 17. 15	11.12.49.13	4. 999281	— 17. 55. 30
1635. Janu. 14. 17. 48	3. 7. 8. 20	4. 993328	— 25. 25. 20
1636. Julij. 6. 8. 10	8.26.25. 5	5. 007079	+.—26. 56. 0

Let



Let EMO be the Ellipsis of *Mercury*, OE the transverse Diameter, EGO the Circle circumscribed, C the Center, A the place of the Sun, and in the first, second and third Observations, Let PQ and R denote the

the places of the Earth, $P A$, $Q A$ and $R A$ her distances from the Sun; The right Lines $P L$, $Q M$ and $R H$ Continging the Ellipsis (in the places of *Mercury* at L , M and N) and meeting with $A F$, $A G$ and $A H$ in the Periphery of the Circle; $P F A$, $Q G A$ and $R H A$ shall be right Angles by the 49 prop. of the 3 of *Apollonius*.

Then upon the Chord $F H$ letting fall the Perpendiculars $A I$, and $C K$, equally dividing it in K , drawing $A T$ parallel unto it, and completing the Diagram, we thus proceed.

The difference of the Earths Longitudes in the first and second Observation is $P A Q$ $114^{\circ} 19' 7''$ in the second and third $Q A R$ $169^{\circ} 16' 45''$ also the Complement to a quadrant of the greatest Elongation of *Mercury*, is in the first Observation $P A F$ $72^{\circ} 4' 30''$ in the second $Q A G$ $64^{\circ} 50' 40''$ in the third $R A H$ $63^{\circ} 4' 0''$.

$P A Q$.	114	19	7	$Q A R$.	169	16	45
$Q A G$.	64	50	40	$Q A G$.	64	50	50
$P A G$.	179	9	47	$G A R$.	104	26	5
$P A F$.	72	4	30	$R A H$.	63	4	0
$F A G$.	107	5	17	$G A H$.	41	22	5

Rad. $P A$.	4.999281
$A P F$. $17^{\circ} 55' 30''$ fin.	9.488229
$A F$.	4.487510

Rad. $Q A$.	4.993328
$A Q G$. $25^{\circ} 9' 20''$ fin.	9.628468
$A G$.	4.621796

Rad. $R A$.	5.007079
$A R H$. $26^{\circ} 56' 0''$ fin.	9.656054
$A H$.	4.663132

$A H$.	4.663133
$A F$.	4.487510
$56^{\circ} 16' 53''$ tan.	10.175653

L

Rad

Rad.	$\begin{matrix} \cdot & ' & '' \\ 11 & 16 & 53 \end{matrix}$ tan.	9. 299904
	15 46 19. tan.	9. 450930
	3 13 29. tan.	8. 750834

<i>A F H.</i>	18 58 48 fin.	8. 512569
<i>A H.</i>		4. 663133
<i>H A F.</i>	148 27 22 fin.	9. 718628
		14. 381761
<i>H F.</i>	73993	4. 869192

<i>A H.</i>		4. 663133
<i>A G.</i>		4. 621796
	47 43 22 tan.	10. 041337

Rad.	2 43 22 tan.	8. 677217
	69 18 57 tan.	10. 424022
	7 10 45 tan.	9. 100239

<i>A G H.</i>	76 29 42 fin.	9. 987822
<i>A H.</i>		4. 663133
<i>G A H.</i>	41 22 5. fin.	9. 820132
		14. 483265
<i>G H.</i>	31293	4. 495443

<i>A G.</i>		4. 921796
<i>A F.</i>		4. 487510
	53° 43' 13'' tan.	10. 134286
Rad.	8 43 13 tan.	9. 185779
	36 27 21 tan.	9. 868509
	6 27 54 tan.	9. 054288

(71)

AFG. $42^{\circ} 55' 15''$ fin.	9.833139
AG.	4.621796
FAG. 107 5 17 fin.	9.980392
	14.602188
FG. 587566	4.769049

HF. 73993

GH. 31293

FG. 58756

sum. 164042

$\frac{1}{2}$	82021	4.9139257	8.818532
Diff. 1	8028	3.9046075	
2	50728	4.7052487	29.071951
3	23265	4.3667035	

$53^{\circ} 15' 32''$ ————— .20.253419
tan. 10.126709

FGH. 106 29 4 fin.	9.981772
KH. + Rad.	14.568162
CH. 38582	4.586390

Rad. CH.	4.586390
CHK. $16^{\circ} 29' 4''$ fin.	9.452944
CK. 10948	4.039334

Rad. AF.	4.487510
AFI. 18 59 48 fin.	9.512569
AI. 10002	4.000079
TC. 949	

Rad. AF.	4.487510
FAI. 71 0 12 fin.	9.975679
FI. 29053	4.463189
FK. 36997	
IK. 7944 = AT:	

L 2

AT

$$\begin{array}{rcl} AT. & 7944 & \text{---} \text{---} \text{---} 3.900039 \\ \text{Rad. } TC. & 946 & \text{---} \text{---} \text{---} 12.975891 \\ TAC. & 6^\circ 7' 28'' \text{ tan.} & \text{---} 9.075852 \end{array}$$

$$\begin{array}{rcl} TAC. & 6^\circ 47' 28'' \text{ sin.} & \text{---} 9.072801 \\ \text{Rad. } TC. & & \text{---} 12.975891 \\ CA. & 8000 & \text{---} 3.903090 \end{array}$$

$$\begin{array}{rcl} TAC. & \text{---} 6^\circ 47' 28'' \\ TAH. & \text{---} 12^\circ 32' 50'' = AHF \end{array}$$

$$\begin{array}{rcl} CAH. & \text{---} 19^\circ 20' 18'' \\ RAH. & \text{---} 63^\circ 4' 0'' \end{array}$$

$$\begin{array}{rcl} RAO. & \text{---} 43^\circ 43' 42'' \\ R. & \text{---} 266^\circ 25' 5'' \end{array}$$

$$O. \text{---} 222^\circ 41' 23''$$

Hence the Semidiameter of the Orb equal to the Mean distance of *Mercury*, is *CH*. 38582 parts. The Eccentricity *CA*. 8000, and the Longitude of the Aphelion in *O*. $78^\circ 12' 41'' 23''$.

But reducing the curvate distances to the true, and comparing these with some most certain applications to fixt Stars and exactest Observations of *Gassendus* and others, to the mean distance of *Mercury* from the Sun 38710 parts, We state his Eccentricity 7970. with the Sidereal place of his Aphelion $7^\circ 13' 48''$. and to this, his true place and middle Motion, as followeth.

Anno 1631. October the 28th. day, about 9^h. in the forenoon, *Gassendus* at *Paris*, with a Telescope, observed *Mercury*, appearing in the Sun, between the North and West part of his Body, and at 10^h. 28'. he past off, making the Angle with the vertical Circle at the Suns center (as we gather by the like observation made since) nearest $370. \frac{1}{2}$.

The

The *Æqual Time* of the end of this Mercurial Eclipse of the Sun was at London, *October* the 27th day 22^h. 14'. The Longitude of the Sun from the first Star of *Aries* 6° 16' 44". 25". and his Semidiameter, 16'. 6". whence we compute the Geocentrick Sidereal place of *Mercury* 6°. 16'. 29'. 7". with Latitude North, 5'. 21" his Heliocentrick place 0° 17' 17" 28" reduced to his Orbit, 0° 17' 18". 10". and his Inclination North, 11'. 33".

The place of <i>Mercury</i> in his Orbit: —————	0	17	18	10
The Aphelion substract. —————	7	13	48	0

The true Anomaly substract. —————	5	3	30	10
The Absolute <i>Æquation</i> Add. —————	0	9	13	33

The Mean Anomaly. —————	5	12	43	43
-------------------------	---	----	----	----

To find the place of the Nodes with the Inclinations of the Orbits of ♄ ♃ ♁ ♀ ☿.

A Nno 1587 *January* the 9th. day, 9h. P. M. reduced to the Meridian of London, *Tycho Brahe* observed *Saturn* in Latitude from the first Star of *Aries*, 11°. 28' 42". 53". with Latitude (corrected by our Obliquity of the *Ecliptick*) 2° 27'. 23". South; at which time by our Tables,

The Mean Anomaly of <i>Saturn</i> was —————	4	11	30	24
His Heliocentrick Longitude —————	0	4	51	19
The Longitude of the Sun. —————	9	1	58	10
The complement of Commutation. —————	3	2	53	9
The Parallax of the Orbe substract. —————	0	6	8	24
The Geocentrick place of <i>Saturn</i> —————	11	28	42	55
His Elongation or distance from the Sun. —————	2	54	44	45

Again, Anno 1591 *December* the 9th. day, 12h. reduced to our Meridian, the Sidereal place of *Saturn* was observed by *Tycho*, 2°. 12' 51" 42" with Latitude (corrected as before) 31' 32" South, and then according to our Tables,

The

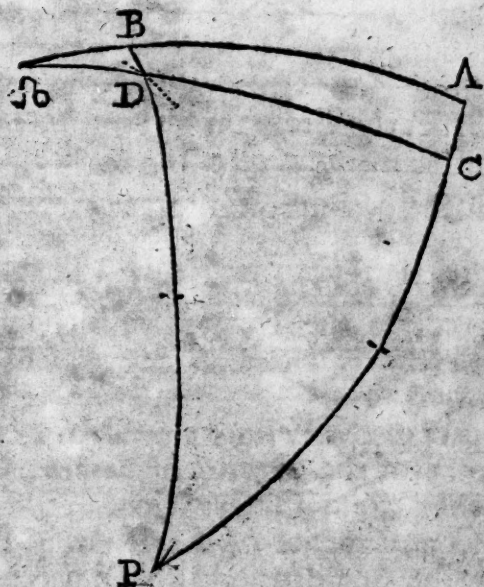
	S	O	'	"
The mean Anomaly of <i>Saturn</i> was	6	11	34	15
His Heliocentrick Longitude	2	11	29	54
The Longitude of the Sun.	8	0	11	59
The Commutation.	5	18	42	5
The Parallax of the Orbe, add.	0	1	22	20
The Geocentrick place of <i>Saturn</i> .	2	12	52	14
His Elongation or distance from the Sun.	5	17	19	45

As the sine of Elongation, to the sine of Commutation, so the Tangent of Latitude observed, to the Tangent of Inclination or Latitude at the Sun. Therefore the Heliocentrick Latitude was in the first Observation $2^{\circ} 27' 26''$ in the second $28' 4''$.

Then let A $\odot$ be a part of the Ecliptick or Orbite of the Earth, P the Pole thereof, C $\odot$ is part of the Orbite of *Saturn*, C his place in the first and D his place in the second Observation.

Hence by the given Complements of Latitude, CP $87^{\circ} 32' 34''$ and PD $89^{\circ} 31' 56''$ with the Angle included, or difference of Heliocentrick Longitudes CPD $66^{\circ} 38' 35''$. we find PCD equal to B D $\odot$ $87^{\circ} 31' 31''$ which with DB $28' 4''$ and the right Angle at B, gives B $\odot$ $10^{\circ} 41' 51''$ the Longitude of the Node from *Saturn*, and B $\odot$ D $2^{\circ} 31' 1''$ for the Inclination of his Orbite, and to his Heliocentrick Longitude in the second Observation $2^{\circ} 11' 29' 54''$ add B $\odot$ $10^{\circ} 41' 51''$. the sum is $2^{\circ} 22' 11' 45''$. for the place of the Node.

A far-



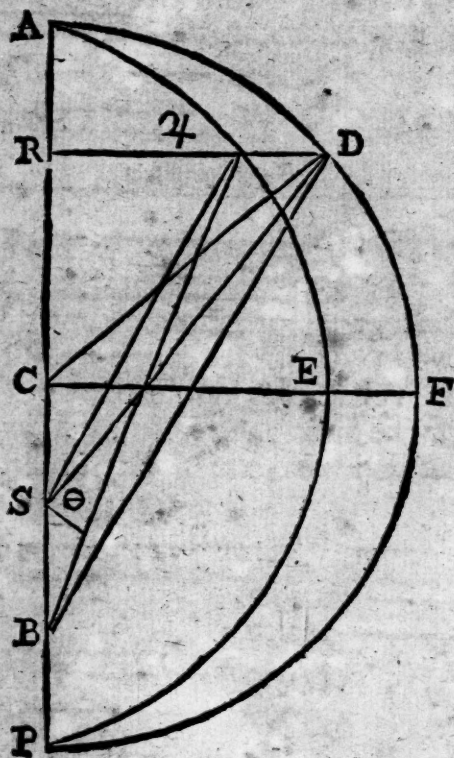
A farther Proof of the verity of our Fundamentals, and how by many exact Observations we have limited all our Numbers, with the true places of the Nodes, as well as the middle Motions of *Mercury* and *Venus* by their appearances in the Sun, the Calculation by our Tables will easily shew ; And that the Ecliptical Poles, with the Nodes or Intersections of the Orbites of the Primary Planets are really Fixt and Constant in the same Sidereal places, reason itself, with all certain and undeniable Observations will declare.

To Limit the Middle-Motions.

A *N*^o *Christi* 508 *September* the 27th. in the morning, *Jupiter* was observed 3 Digits towards the North from *Cor Leonis*, and appeared then least distant from the Star ; by which compared with other Observations, we determine the Geocentrick Sidereal Longitude of *Jupiter* at that

that time $3^h. 26^m. 43^s$ the place of the Sun was $5^{\circ}. 22'. 45''$ and the Logarithm of the Earths distance from him. 4. 998001. also the mean distance of *Jupiter* is 520110 parts his Eccentricity. 25050. and the place of his Aphelion $5^{\circ}. 9'. 50''$ whence his Heliocentrick place and Mean Anomaly is required.

Let $P \psi A$ be the Ellipsis of *Jupiter*, PDA the Circle circumscribed, C the Center thereof, AP the Transverse Diameter and CE the Conjugate semidiameter of the Ellipsis, S the fixt place of the Sun, ψ the place of *Jupiter*, Θ the place of the Earth; Continue $\psi \Theta$ until it meet the line of the Transverse Diameter in B , produce the Ordinate $R \psi$ unto D and draw the other right lines as in the Diagram.



The solution is manifest by these following Operations.

$$\begin{array}{r}
 \text{SB } \odot. 43 \ 7 \ 0. \text{ fin.} \quad \text{---} \quad 9.834730 \\
 \text{S } \odot. \quad \text{---} \quad 4.998001 \\
 \text{S } \odot \ 4. \ 56 \ 2 \ 0. \text{ fin.} \quad \text{---} \quad 9.918745 \\
 \hline
 \quad \quad \quad \quad \quad \quad 14.916746 \\
 \text{SB} \text{---} 120786 \quad \text{---} \quad 5.082016 \\
 \text{CS} \text{---} 25050 \\
 \text{CB} \text{---} 145836
 \end{array}$$

$$\begin{array}{r}
 \text{CP.} \text{---} 520110 \quad \text{---} \quad 5.716095 \\
 \text{CE.} \text{---} 519506 \quad \text{---} \quad 5.715591 \\
 \text{Diff. Log.} \quad \text{---} \quad 504 \\
 \text{RB } 4. \ 43^{\circ} \ 7' \ 0'' \text{ tan.} \quad \text{---} \quad 9.971429 \\
 \text{RBD.} \ 43 \ 9 \ 0: \text{ tan.} \quad \text{---} \quad 9.971933
 \end{array}$$

$$\begin{array}{r}
 \text{CD.} \text{---} 520110 \quad \text{---} \quad 5.716095 \\
 \text{CB.} \text{---} 145836 \quad \text{---} \quad 5.163865 \\
 \text{Diff. Log.} \quad \text{---} \quad 552230 \\
 \text{CBD} \text{---} 43^{\circ} \ 9' \ 0'' \text{ fin.} \quad \text{---} \quad 9.834999 \\
 \text{CDB} \text{---} 11 \ 3 \ 21. \text{ fin.} \quad \text{---} \quad 9.282769 \\
 \text{RCD} \text{---} 54 \ 12 \ 21 \\
 \frac{1}{2} \text{---} 27 \ 6 \ 10
 \end{array}$$

$$\begin{array}{r}
 \text{CD} \text{---} 520110 \\
 \text{CS} \text{---} 25050 \\
 \text{sum.} \quad 545160 \quad \text{---} \quad 5736524 \\
 \text{diff.} \quad 495060 \quad \text{---} \quad 5694658
 \end{array}$$

$$\begin{array}{r}
 \text{Diff. Log.} \quad \text{---} \quad 41866 \\
 27^{\circ} \ 6' \ 10'' \text{ tan.} \quad \text{---} \quad 9.709089 \\
 24 \ 55 \ 37. \text{ tan.} \quad \text{---} \quad 9.667223 \\
 \text{M}
 \end{array}$$

CsD

CS D.	52° 1' 47".	tan.	10. 107655
Diff. Log. C F & C E			504
CS 4	51 59 51.	tan.	10. 107151

PS 4.	128° 0' 9"		41866
$\frac{1}{2}$.	64 0 5.	tan.	10. 311845
	61 45 42.	tan.	10. 269979
	2 14 23		
Æq. Ell.	4 28 46		
CS 4	51 59 51		504
sum	56 28 37.	tan.	10. 178837
	56 26 47.	tan.	10. 178333
Var. +	1 50		
Æq. Abs.	4 26 56		

Hence,

The True Anomaly is (PS 4 with the femicircle)	10 8 0 9
The Absolute Equation, subtract	4 26 56
The mean Anomaly of Jupiter	10 3 33 13

Now by reason of the Uniformity of the Primary Planets Motions, it will be needless in this place to add any farther Demonstrations or examples for finding them; We therefore after often trials and many careful calculations conclude.

The Mean-Anomaly at London | Thy Middle-Motion in
Anno 1660. December the last | 20 Julian-years or 7305
day at noon. T. Æq. | days.

Of	s	°	'	"	Rev.	s	°	'	"
♄ Saturn	10	15	34	12	0	8	4	25	18
♃ Jupiter	11	24	13	0	1	8	6	59	30
♂ Mars	4	2	8	48	10	7	18	4	24
♁ The Earth	6	13	40	19	19	11	29	53	1
♀ Venus	7	28	48	40	32	6	3	33	15
☿ Mercury	7	5	2	0	83	0	14	30	0

Of Saturn.

	S	°	'
The Sidereal Longitude of the Aphelion	7	28	30
The Longitude of the Ascending Node	2	22	30
The Inclination of the Orbite		2	30

The Transverse Semidiameter of the Ellipsis	953800
The Conjugate Semidiameter	952230
The Eccentricity	54700

The Logarithm of Elliptick Equation	49868
The Logarithm of Variation	715

Of Jupiter.

	S	°	'
The Sidereal Longitude of the Aphelion	5	9	50
The Longitude of the Ascending Node	2	8	0
The Inclination of the Orbite	1	20	

The Transverse Semidiameter of the Ellipsis	520110
The Conjugate Semidiameter	519506
The Eccentricity	25050

The Logarithm of Elliptick equation	41866
The Logarithm of Variation	504

Of Mars.

	S	°	'
The Sidereal Longitude of the Aphelion	4	1	12
The Longitude of the Ascending Node	0	19	10
The Inclination of the Orbite	1	52	

M 2

The

The Transverse Semidiameter of the Ellipsis	152369
The Conjugate Semidiameter	151715
The Eccentricitie	14100

The Logarithm of Elliptick æquation	80609
The Logarithm of Variation	1868

Of the Earth.

The Sidereal Longitude of the Aphelion	8° 8' 20"
--	-----------

The Transverse Semidiameter of the Ellipsis	100000
The Conjugate	99985
The Eccentricitie	1732

The Logarithm of Elliptick æquation	15045
The Logarithm of Variation	65

Of Venus.

The Sidereal Longitude of the Aphelion	9° 5' 0"
The Longitude of the Ascending Node	1° 15' 16"
The Inclination of the Orbit.	3° 24'

The Transverse Semidiameter of the Ellipsis	72333
The Conjugate	72331
The Eccentricitie	517

The Logarithm of Elliptick æquation	6208
The Logarithm of Variation	11

Of

Of Mercury

The Sidereal Longitude of the Aphelion	7	13	48
The Longitude of the Ascending Node	0	15	42
The Inclination of the Orbit	6	54	

The Tranverse Semidiameter of the Ellipsis	38710
The Conjugate	37881
The Eccentricity	7970

The Logarithm of Elliptick æquation	181427
The Logarithm of Variation	9406

Of the Semidiameters of the Sun, Earth and Moon, &c.

By such Telescope-Observations extant as we esteem the best,

To the mean distance of the Earth from the Sun.	10000000
The Semidiameter of the Sun is of the same parts	46300
The Semidiameter of the Earth	727

To the Mean distance of the Moon from the Earth.	100000
The Semidiameter of the Earth is	1650
The Semidiameter of the Moon	446

Whence at all times the distance of the Luminaries being first found, we may easily obtain their apparent Semidiameters; and for the Semidiameter of the Earths shadow, in Lunar Eclipses, observe here the Diagram of Hipparchus, wherein,

Let

A geometric diagram showing a conical sector. A vertical line segment represents the axis, with points A, B, C, and G marked from top to bottom. A horizontal line segment AD is drawn from point A to the right, with point H on it. A curved line segment represents the surface of the cone, with points D, E, and F marked from top to bottom. A line segment connects point B to point E. A line segment connects point C to point F. A line segment connects point G to point F. A line segment connects point A to point E. A line segment connects point B to point F. A line segment connects point C to point E. A line segment connects point G to point D. A line segment connects point A to point D. A line segment connects point B to point D. A line segment connects point C to point D. A line segment connects point G to point A. A line segment connects point G to point B. A line segment connects point G to point C. A line segment connects point G to point D. A line segment connects point G to point E. A line segment connects point G to point F. A line segment connects point G to point H. A line segment connects point G to point I. A line segment connects point G to point J. A line segment connects point G to point K. A line segment connects point G to point L. A line segment connects point G to point M. A line segment connects point G to point N. A line segment connects point G to point O. A line segment connects point G to point P. A line segment connects point G to point Q. A line segment connects point G to point R. A line segment connects point G to point S. A line segment connects point G to point T. A line segment connects point G to point U. A line segment connects point G to point V. A line segment connects point G to point W. A line segment connects point G to point X. A line segment connects point G to point Y. A line segment connects point G to point Z.

1. The Semidiameter of the Sun, less by his Horizontal Parallax, is equal to the Semiangle of the Cone of the Earths shadow.

2. The Horizontal Parallax of the Moon, less by the Semiangle of the Cone of the Earths shadow, is equal to the apparent semidiameter of the Shadow.

3. The Aggregate of the Horizontal Parallax of the Luminaries, is equal to the Aggregate of the apparent Semidiameter of the Sun, and Shadow of the Earth.

Therefore from the Aggregate of the Horizontal Parallax of the Sun and Moon, subtract the apparent Semidiameter of the Sun, and there will remain the apparent Semidiameter of the Earths Shadow.

For

*For the Proportional Magnitudes of these
three bodies.*

The Semidiameter.	Logarithm.
Of the Sun. 46300	4 665581
Of the Earth. 727	2 861534
differ.	1 804047
258309. tripl:	5 412141

Therefore the Globe of the Sun exceeds the Globe of the Earth in Magnitude. 258309. times.

The Semidiameter.	Logarithm.
Of the Earth. 1650	3 217484
Of the Moon. 446	2 649335
differ.	0 568149
50 fere $\frac{7}{11}$: tripl:	1 704447

So the Earth is greater then the Moon 50 times and about $\frac{7}{11}$ parts.

*Of the Semidiameters, and Proportions of the other
Primary Planets to the Earth.*

Comparing the accurate observations of *Hugenius* lately published in his *Systema Saturnium*, with some other, and that of *Gassendus* of *Mercury* and *Horrox* of *Venus* seen in the Sun, we determine, the apparent greater Semidiameter of the ring of Saturn in his mean distance 30'' and

The Apparent Semidiameters of these 5 Planets in their mean distances from the Earth	{	$\frac{1}{2}$ —10 30
		$\frac{1}{4}$ —24 0
		$\frac{1}{8}$ —4 0
		$\frac{1}{2}$ —10 30
		$\frac{1}{2}$ —5 0

Which

Which in such parts as the Semidia-
 meter of the Earth is 727. gives the Se-
 midiameter of _____

h	—	4855
u	—	6054
δ	—	296
g	—	509
q	—	242

And hence the body of *Saturn* is greater than the Earth 298 times, and the magnitude of *Jupiter* is more than the Earth 577 times; but the Earth is greater then the other three, exceeding *Mars* 15 times, *Venus* 3 times, and *Mercury* 27 times.

Here it may be well worth our observation, that those Primary Planets that have Secondary or Attendants about them, are of greater Magnitude than those that have none, and

The More Attendants. The Greater Orb. The Lesser inequality.	}	Compared according to their number and pro- portion, are testimonies of the greater Planet.
--	---	--

And we might likewise instance, that the fixt positions and distances of the Primary Planets Aphelions, are Correspondent to the Sympathy and Antipathy of their Natures; but these hints we only propose to the consideration of the Judicious.

*I shall add this necessary Demonstration of our
 friend Mr. Robert Anderson, not hitherto
 published by any.*

The Logarithmes of two sides of a plain Triangle and the angle comprehended being given, to find the other angles.

The Analogies.

1. As the Lesser side is to the Greater, so is the Radius to the Tangent of an Arch.

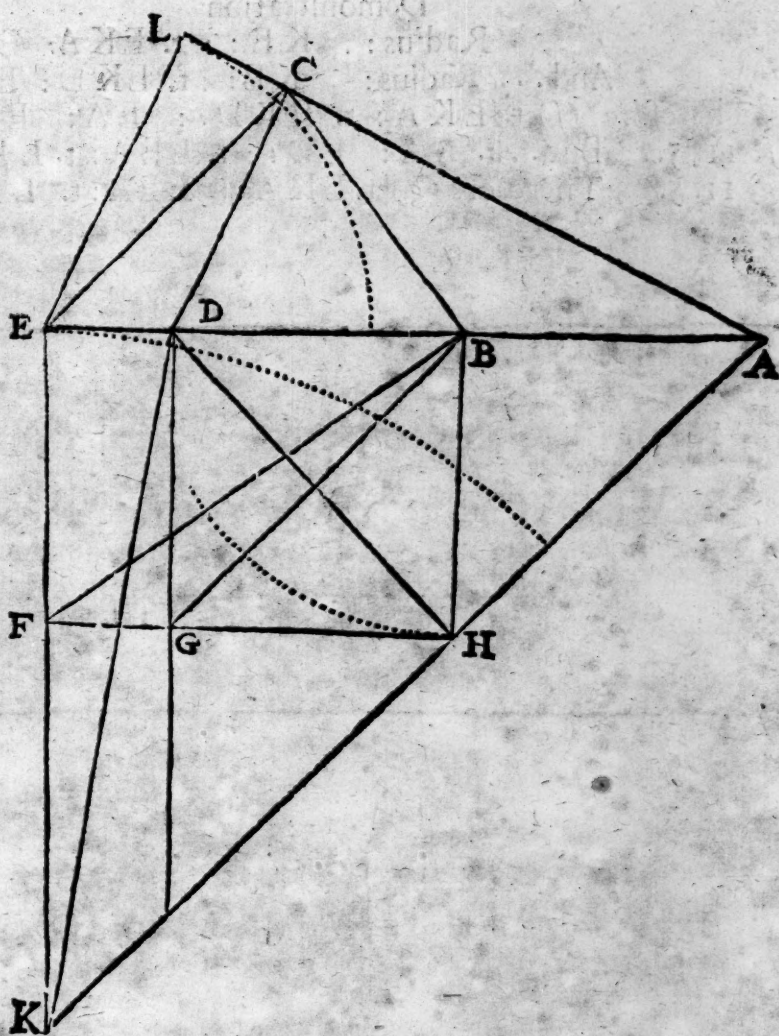
2. As the Tangent of 45° is to the Tangent of the former found Arch Less 45° so is the Tangent of half the Opposite Angles, to the Tangent of half their difference.

Construction. Let EA (=EK) be the sum of the sides, ED the difference,

(85)

difference, $EB (=FH)$ the greater, $CB (=BA=BD=BH=HG)$ the lesser, and EBC the angle given.

Complete the Diagram, and make it $BH:HF::\text{Radius:tangent}$
 FBH . then $FBH-GBH=FBG=EKD$.



Demonstration. For (a) $HB: HA (=HD):: HF: HK$, (b) $(a)4.6$ therefore the Triangles FBH and KDH are æquiangled, (c) $(b)5.6$. but if $FBH-GBH$ and $KDH-IDH$. $FBG=KDI$. (d) but (c) $3.22.1$. $KDI.=EKD$. therefore (e) $FBG=EDK$. (d) 29.1 . (e) $1.22.1$

N

The

(86)

The second Analogie which is tangent EKA: tangent EKD.: tangent
LEA: tangent LEC.

Demonstration

Radius: . KE: : t. EKA: EA:

And... Radius: KE: : t. EKD: ED.

Therefore (f) t. EKA: t. EKD.: EA: ED.

(f) II. 5. But... EA: ED.: t. LEA: t. LEC.

(g) II. 5. Therefore (g) t. EKA: t. LEA: t. LEC.

of

A Table shewing the Quantity of Twilight, any time of the Year.

If you would find the Quantity of *Twilight* by this Table do thus; seek the Sign that the Sun is in, on the left hand of the Table, and the Elevation of the Pole on the Head, and in the Place of meeting you shall have the just Quantity of *Twilight*, that is to say, how long the Day is dawning before the rising of the Sun, and how long it is before *Twilight* ends, after the going down of the Sun; but for better Explanation observe this Example following.

The Place of the Sun.		The Elevation of the Pole.											
		46		48		50		52		54		56	
		H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
	♈	2	36										
♈	♈	2	23	2	35								
♉	♉	1	58	2	1	2	8	2	17	2	37	2	55
♊	♊	1	43	1	45	1	49	1	54	2	1	2	9
♋	♋	1	43	1	46	1	50	1	55	2	2	2	8
♌	♌	1	48	1	53	1	59	2	6	2	14	2	22
♍	♍	1	55	2	2	2	7	2	13	2	19	2	27

Example. When the Sun enters the first Point of ♋ or ♌ you desire to know how long Day breaks before Sun rising, and how long day light ends after the Sun's setting, therefore cast your Eye upon the Sun's Place, and proceed directly forward, till you come under the Latitude of 52 Degrees, and there you find 1 Hour 54 Minutes; which is the Time the Day breaks before Sun rise, and also the time that Twilight ends after Sun set.

The Proportion of the Bodies and Sphears of the Planets.

The Sun is greater than	$\frac{1}{2}$	9	times	Saturn is greater than	$\frac{1}{2}$	0 $\frac{1}{2}$	times.
	$\frac{1}{4}$	14			δ	286	
	δ	2535			φ	152	
	φ	1270			φ	418	
	φ	3705			$\odot$	1122	
	$\odot$	10000			$\odot$	12	
	$\ominus$	196			$\ominus$		

Jupiter is greater than	{	δ	182	times	{	φ is twice as big as δ , and three times as big as φ .			times.
		φ	84						
		φ	266			δ contains φ once and a half.			
		$\odot$	714						
		$\ominus$	14			$\odot$ is greater than { δ 13 φ 6 φ 19			

The Distance of the Planets amongst themselves, and with the Firmament.

The Earth is distant from the Firmament	49150720	times.
Saturn (in his mean Distance) is from the Firmament	127864480	
Jupiter is distant from the Firmament	35425120	
Mars is distant from the Firmament	47490640	
The Sun is distant from the Firmament	44720000	
The Moon is distant from the Firmament	48958080	miles
Saturn is distant from	$\frac{1}{4}$ 23138640	
	δ 29361440	
	$\odot$ 3193352	
	$\odot$ 36171600	
Jupiter is distant from	δ 7722800	miles
	$\odot$ 9295880	
	$\odot$ 13532960	
	$\odot$ 1572080	
	$\odot$ 6310160	
Mars is distant from	$\odot$ 4238080	miles.

Of the USE of our TABLES.

THe Radix of each Middle-Motion being accommodated to the last day of the Julian year in the Meridian of *London* the Metropolis of *Great Britain*:

1. For the Temporary difference of the Meridians of *London* and other Places.

IN the Catalogue of Places, I find *Uraniburg* in *Denmark* 0 h. 50'. Ori. that is, so much to the East from *London*; therefore the Sun being in the Meridian of *London*, the Time at *Uraniburg* is 0 ho. 50' after-noon; but supposing the Sun in the Meridian of *Uraniburg* the Time at *London* is 11 ho. 10'. of the forenoon. In the same Catalogue I find *Dublin* in *Ireland* 0 ho. 26'. Occ. that is 26' to the West; therefore from the given Time at *London* subtract 26', the residue shall be the Time at *Dublin*; or to the given Time at *Dublin* add 26', the sum is the Time at *London*.

2. To reduce the Apparent Time to the Equal, and Contra.

UNDER the Title (*TABULÆ ÆQUATIONIS TEMPORIS*) Enter the first Table with the Sign and degree of the Sun's Longitude from the Æquinox, and the Second with the Mean Anomaly of the Earth, so have you the Æquation in two parts, of which, if both add or both subtract, the sum, but if the one add and the other subtract, the difference (according to the greater part) is the absolute Æquation, which as the Titles direct, added or subtracted to or from the Apparent Time, gives the Equal; but to reduce the Equal to the Apparent take the Contrary Titles.

Q

3. To

3. To Compute the true Longitudes of the Sun and fixt Stars.

A Nno 1586. July the 27th day in the Meridian of *Draniburg* by the observation of Noble *Tych Brahe* the true place of the Sun was Ω . $13^{\circ} 21' 35''$. The time reduced to the Meridian of *London* was July the 26th day 23 ho. 10'. æquated 23 ho. 25'.

First in the Table entituled *Terra Tabula Motus Medii, &c.* finding the neereſt leſſer year, and adding the reſidue of years, with the Month, day, hour and Minute, I ſet them down in order, with the Mean Anomaly of the Earth and Præceſſion of the Æquinox answerable unto them, and by addition gathering the total ſums, I have the Mean Anomaly and Præceſſion as followeth.

	s	°	'	"	s	°	'	"
1581	6	14	8	15	0	27	20	0
5	11	29	43	28			4	0
Julii	5	28	23	44			24	
d. 26	025	37	33				3	
h. 23		56	40					
' 25		1	2					
Anom: Med: Θ	1	8	50	42	0	27	24	27. Præc. æq.

Then with the Mean Anomaly, in *Tabula Equationis Terræ* next following (by making proportion as need requires) I find the æquation $1^{\circ} 13' 27''$. which (according to the Title) ſubſtracted from the mean, Gives the True Anomaly $1^{\circ} 7' 37' 15''$. to which adding the Apogæon, $2^{\circ} 8' 20'$. the Longitude of the Sun, from the firſt ſtar of *Aries* is $3^{\circ} 15' 57' 15''$. and to this the Præceſſion $0^{\circ} 27' 24' 27''$. the ſum is his Longitude from the æquinox $4^{\circ} 13' 21' 42''$.

Otherwiſe, with the mean Anomaly of the Earth $1^{\circ} 8' 50' 42''$. I enter the Table entituled *SOLIS TABULA LOCI GEOCENTRICI*. and (making proportion by the Table of Logiſtical Logarithms I find the Longitude of the Sun from the firſt ſtar of *Aries* $3^{\circ} 15' 57' 15''$. to which adding the Præceſſion $0^{\circ} 27' 24' 27''$. the ſum is his Longitude from the æquinox $4^{\circ} 13' 21' 42''$. as before, that is Ω $13^{\circ} 21' 42''$.

Anno

Another Example.

Anno 1590. March the 11th day at Uraniburg by Tycho's observation of the Sun's Meridional Altitude, his true place was. γ . $0^{\circ} 33' 19''$. The Apparent Time at London was March the 10th day 23 h. 10'. but the mean or equal time 23 h. 2'.

	s	°	'	"	s	°	'	"
1581	6	14	8	15	0	27	20	0
9	11	29	42	4			7	12
Martii	1	28	9	4				8
d. 10		9	51	22				1
b. 23			56	40				
' 2				5				
Anno. Med. Θ .	8	22	47	30	0	27	27	21
Long. Θ a I * γ	11	3	5	57				
Præcess. Equi.	0	27	27	21				
Long. Θ . ab. Equi.	0	0	33	18				

Therefore, *Anno Christi, 1590. March the 10th day 23 ho. 2'. T. M.* the true Place of the Sun was in γ $0^{\circ} 33' 18''$.

And the *Præcession* is the Longitude of the first Star of *Aries* from the Vernal æquinox, which added to the Longitude of any other fixt star in our Catalogue, the sum is the true Longitude thereof from the æquinox.

4. To find the Exact Time of the Transit of the Earth (or Sun) by any point of the Ecliptick.

Anno 1661 of the Vernal æquinox (which by vulgar rules happeneth on the 9th or 10th of March) the day, hour and minute is required.

The Operation stands thus.

	s	°	'	"
The Longitude of the Sun from the <i>Æquinox</i> . —————	0	0	0	0
The Præcession of the <i>Æquinox</i> . subtract. —————	0	28	24	9
The Longitude of the Sun from the first * of γ is —————	11	1	35	51
The mean Anomaly Correspondent —————	8	21	17	46
<i>Anno 1661.</i> —————	6	13	40	19
—————	2	7	37	27
<i>Martii.</i> —————	1	28	9	4
—————		9	28	23
<i>d.</i> 9 —————		8	52	14
—————			36	9
<i>b.</i> 14 —————			34	30
<i>i.</i> 40. —————			1	39

Therefore, *Anno 1661*, the Equal Time of the Vernal *Æquinox* is *March* the 9th day 14 ho. 40'. To which adding 8' for the æquation of Natural Days, the Apparent time at *London* is 14 ho. 48'.

5. To Calculate the true place of the Moon in her Orbite, &c.

1. **T**O the given time find the true Longitude of the Sun from the vernal *Æquinox*, as before.
2. In *Lunæ Tabula Mediorum Motuum*, gather the Mean Anomaly and place of the Apogæon, in like manner as the Middle Motion of the Earth in the two first examples. Only for the Node, from the radical place thereof to the year first found in the Table, subtract the Middle Motion answerable to the residue of years with the month, day, hour. &c.
3. With the mean Anomaly (in *Tabula Equationis Eccentrici*) find the *Æquation*,

Equation, which (as the Title directs) added or substracted to or from the Mean, gives the true Anomaly, to which adding the Apogæon the sum is the first Equated place of the Moon.

4. From the first Equated place of the Moon, substract the true place of the Sun, the residue is the distance of the Moon from the Sun, which doubled, with the double distance (in *Tabula Reflectionis*) you have the Reflection, which (according to the Title) added or substracted to or from the true Anomaly of the Moon, gives the Anomaly correct.

5. For the Synodical Anomaly, The Moon passing from the Conjunction or Opposition of the Sun to the Quadrature, the Complement to a quadrant of her distance from the Sun is to be added to the Anomaly correct;

But from the Quadrature to the Conjunction or Opposition, the excess above a Quadrant of the distance of the Moon from the Sun is to be substracted from the Anomaly correct;

And the Sum or difference is the Synodical Anomaly, of which if it be less than six signs take the half, if more take the half of the Complement to 12 signs.

6. To the Logarithm of the ^{*}Diameter of the Circle of Evection add the sine of the distance of the Moon from the Sun, the sum rejecting the Radius is the Log. of the Chord of Evection, which substract from the Log. found by the Mean Anomaly, (in *Tabula Logarithmorum a Terræ Lunæ Distantiarum*) and to the residue add the Radius, it shall be the Tangent of an Arch, from which rejecting 45° . As the Radius, to the Tangent of the remaining Arch, so the Tangent of the half Synodical Anomaly or Complement, to the Tangent of an Arch, whose difference from that half is the Angle of Evection, which, if the Synodical Anomaly were less than six signs substracteth, if more it addeth. *So likewise wth Equation.*

And if the Evection and Reflection shall both add or both substract their sum, otherwise their difference (according to the greater part) is the absolute secondary Equation, which added or substracted to or from the place of the Moon first equated, gives her true Longitude in her Orbit.

Example.

Anno 1586: September the 22^d day, 14 h. 24'. was the equal Time reduced to our Meridian, when Noble Tycho observed the place of the Moon in the 90th degree of the Ecliptick.

The place of the Sun was then $\approx 9^\circ 24' 15''$.

	Anom. D:				Apog:				68				
	S	o	'	"	S	o	'	"	S	o	'	"	
1581	3	8	49	0	4	15	5	0	10	8	21	30	R. ————— 3.64043
5	3	6	39	58	6	23	25	50	3	6	41	50	S. 59° 39' 59". — 9.93606
Sep.	9	24	47	31	0	27	4	19	12	52	6		————— 3.57649
d. 22	9	17	25	47		2	27	3	1	9	54		————— 5.01385
b. 14		7	37	16			3	54		1	51		
l. 24			13	4				7			3		r. 87 54 29: — 11 43736
An. med. D	2		36	0	8	6	13		3	20	45	44	r. 42 54 29 — 9.968258
Eq. sub.			4	35					6	17	35	46	r. 45 55 23 — 10.013996
An. Vera.	2	0	58	1	2	0	58	1					r. 43 49 47 — 9.982254
Apog:	0	8	6	13	Ref. Ad	32	44						Eve. 2 5 36. sub.
D 1 Equ:	2	9	4	14		2	1	30	45				Ref: 0 32 44. Add:
⊙ Ver.	6	9	24	15	add: 1	0	20	1					Eq. 2 1 32 52: sub.
D à ⊙.	7	29	39	59	Sy. 3	1	50	46					
Dupl:	3	29	19	58	$\frac{1}{2}$		45	55	23				
Eq. 2 sub:			1	32	52								
D in Orb.	2	7	31	22									

*For the Latitude, and Reduction of the Moon from
her Orbit to the Ecliptick.*

1. **W**ith the double distance of the Moon from the Sun $3^{\circ} 29' 19'' 58''$ (in *Tabula Equationis Nodorum Lune*) I find the Equation $1^{\circ} 31' 32''$ sub. therefore subtracting it from the middle Motion of $\odot$ before found $6^{\circ} 17' 35' 46''$, there remains the true place of the Node $6^{\circ} 16' 4' 14''$ which subtracted from the place of the Moon in her Orbit $2^{\circ} 7' 31' 22''$, the residue is the Argument of Latitude $7^{\circ} 21' 27' 8''$, that is, $51^{\circ} 27' 8''$ from $\odot$.
2. With the distance of the Moon from the Sun $7^{\circ} 29' 39' 59''$ (in *Tabula Excessus Lune Latitudinis, &c.*) I find the Excess $13' 25''$, which to the time proposed gives the Angle of the greatest Latitude of the Moon $5^{\circ} 13' 25''$, and the Analogy is,

For the Latitude.

	°	'	"	
Rad. sin.	51	27	8	— 9.89326
sin.	5	13	25	— 8.95925
sin.	4	5	0	— 8.85251
1				Aug.

For the Reduction.

	°	'	"	
Rad. Co. sin.	5	13	25	— 9.998193
tan.	51	27	8	— 10.098652
tan.	51	20	10	— 10.096845
Differ.				— 6 58. Red. 2 sub.
				There:

Therefore (by the work, and Titles of the next following Table) the true Latitude of the Moon was South $4^{\circ} 5' 0''$, and from the Longitude of the Moon in her Orbit $2^{\circ} 7' 31' 22''$: the Reduction substracts $6' 58''$, leaving her true place in the Ecliptick $2^{\circ} 7' 24' 24''$, that is $\Pi 7^{\circ} 24' 24''$. Observed $\Pi 7^{\circ} 25'$. *ferè*.

Another Example of the place of the Moon in Longitude and Latitude.

A Nno 1594. December the 19th. day 15 h. 3'. æquated and reduced to Meridian of London, Tycho Brahe observed the place of the Moon, exactly in the Nonagesime degree, in $\Omega 13^{\circ} 49'$, with North Latitude, correct by parallax $5^{\circ} 5'$, to which time we compute the true place of the Sun $\nu 8^{\circ} 17' 26''$.

	Anom. $\curvearrowright$				Apog.				$\odot$				
	s	o	'	"	s	o	'	"	s	o	'	"	
1581	3	8	49	0	4	15	5	0	10	8	21	30	R: ————— 3.64043
13	3	22	33	28	5	18	57	50	8	11	26	2	fin: — $34^{\circ} 15' 53''$ — 9.75052
Dec.	3	13	42	20	1	7	12	37	17	41	14		————— 3.39095
d. 19	8	8	14	5	2	7	0		1	0	22		————— 4.97251
h. 15	8	9	56		1	14			1	59			tan: — 88 29 55. — 11.58156
' 3		1	38			1				0			R: — — 43 29 55. — 9.977229
An. Med.	5	1	30	27	11	13	26	39	9	0	9	37	r: — 77 17 8 — 10.646613
Æq. sub.	2	23	47						1	8	11	53	r: — 76 37 30 — 10.623842
An. ver.	4	29	6	40					Sub: 1	37	42		Eve: — 0 39 38. Adde:
Apog.	11	13	26	39					$\odot$ 1	6	34	11	Ref: — 0 34 37. Adde:
$\odot$ 1 Æq.	4	12	33	19					s	o	'	"	Æq. 2. — 1 14 35. Adde:
$\odot$ —	9	8	17	26									R: f: — 5 5 43. — 9.99828
$\odot$ a $\odot$	7	4	15	53	An: ver:	4	29	6	40				i: — 82 46 17 — 10.89675
Dupl.	2	8	31	46	Ref: add:				34	57			i: — 82 44 35 — 10.89503
Æq. 2. Add.	1	14	35		An: Cor:	4	29	41	37				Differ: — — 1 42. Red: $\odot$ Adde:
$\odot$ Orb.	4	13	47	54	Comp: dist: ad:	1	25	44	7				R: f: — 82 46 17 — 9.99653
$\odot$ sub.	1	6	34	11	An: Synod:	6	25	25	44				f: — 5 5 43. — 8.94847
Arg. La.	3	7	13	43	Compl:	5	4	35	16				Lat: $\odot$ Bor: f: 5 3 17. — 8.9450
Red: add:			1	42					77	17	8		
$\odot$ Ecli:	4	13	49	36									

Therefore by our Tables, the true Longitude of the Moon in the Ecliptick was $\Omega 13^{\circ} 49' 36''$, and her Latitude North $5^{\circ} 3' 17''$.

if argument of Latitude be more ν 6 signs 6. To
 ν Reduct. substracts $\odot$ ν Lat: is Aust: if $\odot$ ν opposite

6. To Compute the Apparent Sidereal Places of the five Planets. ♄ ♃ ♅ ♄ ♅.

1. **T**O the time proposed, with the mean Anomaly of the Earth find the Longitude of the Sun from the first Star of *Aries* as before, and (in *Tabula Logarithmorum à Sole Terræ Distantiarum*) the Logarithm of the Earths distance from the Sun.

2. As of the Earth, so of the other Planet whose place is required (in *Tabula Motus Medii ab Aphelio*) gather the mean Anomaly, with which (in *Tabula Loci Heliocentrici*) you have (by making proportion, &c.) the Heliocentrick Sidereal Longitude reduced to the Ecliptick, with the Inclination, and Logarithm of the Curtate distance of the Planet from the Sun.

3. From the Longitude of the Sun, substraſt the Heliocentrick Longitude, of ♄ or ♃, but from the Heliocentrick Longitude of ♅ or ♄ substraſt the Longitude of the Sun, the residue is the Commutation, of which if leſs than 6 ſigns or the complement to a Circle if more, take the half.

4. To the difference of the Logarithms of the Earth and the other Planet add the Radius, it ſhall be the Tangent of an Arch, from which rejecting 45°.

As the Radius to the Tangent of the remaining Arch, ſo the Tangent of the half Commutation or complement, to the Tangent of an Arch, of which and that half, the ſum is the Elongation of ♄ or ♃ from the Sun, and the difference the Parallax of the Earths Orbe; but of ♅ or ♄ the difference is the Elongation.

5. If the Commutation be leſs than 6 ſignes, the Parallax of the Orbe is to be added to the Heliocentrick Longitude of ♄ or ♃, and the Elongation of ♅ or ♄ to the Longitude of the Sun;

But if the Commutation be more than 6 ſignes, the Parallax of the Orbe is to be ſubtracted from the Heliocentrick Longitude of ♄ or ♃, and the Elongation of ♅ or ♄ from the Longitude of the Sun. And the ſum or difference is the true Geocentrick Longitude of the Planet from the firſt Star of *Aries*.

6. As the ſine of Commutation, to the ſine of Elongation, ſo the tangent of Inclination, to the tangent of the Geocentrick Latitude of the Planet.

Example

Example of Saturn.

A *N*o 1593. *J*anuary the 8th. day 9 h. 15'. reduced unto *L*ondon, the Si-
dereal Longitude of Saturn, being by the Observation of *T*ychø,
2° 25' 38' and his correct Latitude North 10'. his place by our Tables is
required. The Longitude of the Sun (*a* 1 * *v*) was then 9° 1' 26' 8''
and the Logarithm of the distance of the Earth from the Sun 4.993006.

	S	'	"	
1581	I	27	53	O
12	4	26	39	II
Jan. 8.		16	4	
b. 9.			45	r.
. 15.			I	
Anno. Med. h	6	24	49	I
Long. Heliocent	2	26	15	44
Long. ☉. ———	9	I	26	8
Commutatio. ———	6	5	10	24
Comp. ad Circ.	5	24	49	36
$\frac{I}{2}$ ———		87	24	48
Paral. Orb. sub.		o	37	49
Long. h Geocent.	2	25	37	55

				5 956 53
				4 99301
tan.	83	47	34	— IO 96352
r. tan.	38	47	34	— 9 90515
tan.	87	24	48	— II 34509
tan.	86	46	59	— II 25024
sum.	174	II	47	Elongatio.
differ.	o	37	49	Paral. Orb.
sin:	5	10	24	— 8 95506
sin:	5	48	13	— 9 00483
tan:	o	9	51	— 7 45716
Lat. h Bor:	16	46	199	
tan.	o	11	3	— 7 50693

Of Jupiter.

A Nno 1627. April the 25th day 12h reduced to the Meridian of London, a Learned German by help of a perspective, observed the centers of Jupiter and the Northern brightest star in the front of m distant $3\frac{1}{2}'$ the Planet being in Antecedence and a little lower, in less latitude than the star. The place of the star is in Longitude from the first of γ $6^{\circ} 29' 59''$. with Latitude North according to Tycho $1^{\circ} 5'$. The Sidereal Longitude of the Sun by our Tables $0^{\circ} 17^{\circ} 6' 30''$. and the Logarithm of the Earths distance 5.004606.

	s	°	'	''		5 72935
1621	7	13	14	0		5 00461
6	6	2	3	21		
April:	7	28	42		tan. 79 19 34	10 72474
d. 25	2	4	38			
b. 12			2	30	r. tan. 34 19 34	9 83431
					tan. 84 46 58	11 03948
Anom. Med. 4.	1	21	53	11	tan. 82 23 0	10 87379
Long. Heliocent :	6	27	32	33	sum. 167 9 58	Elongatio.
Long. ☉	0	17	6	30	diff. 2 23 58	Paral. Orb.
Commutatio.	5	19	33	57	fin. 10 26 3	9 25793
$\frac{1}{2}$		84	46	58	fin. 12 50 2	9 34660
Paral. Orb. Adde.			2	23 58	tan. 0 51 55	8 17907
Long. 4 Geocent:	6	29	56	31	Lat. 4 Bor.	17 52567
					tan. 1 3 40	8 26774

Of Mars.

A *N*no 1634. *M*ay the 29th day 12h. 7' was the Equal Time at *L*ondon, when *G*assendus in his larger Telescope observed *M*ars conjunct in the same Longitude with the star in the extremity of the south wing of π (which in our Catalogue is $45^{\circ} 23' 55''$ from the first of γ , with Latitude North $43'$.) the Latitude of the Planet appearing less by 3 times the quantity of his own diameter. The Sidereal Longitude of the Sun was then $19^{\circ} 54' 18''$. and the Logarithm of the Earths distance 5.007064.

	s	28	'	"		
1621	0	26	0	0		5 197970
13	10	28	7	0		5 007064
<i>May</i>	2	2	53	3		
<i>d.</i> 29		15	11	43	<i>tan.</i> 57	12 22 — 10 190926
<i>h.</i> 12			15	43		
7				9	<i>r. tan.</i> 12	12 22 — 9 335095
					<i>tan.</i> 67	0 33 — 10 372341
<i>Anom. Med. δ.</i>	2	12	27	44	<i>tan.</i> 27	0 52 — 9 707436
<i>Long. Heliocent.</i>	6	3	55	24	<i>Sum.</i> 94	1 25 <i>Elongatio.</i>
<i>Long. $\odot$</i>	1	19	54	18	<i>diff.</i> 39	59 41 <i>Paral. Orb.</i>
<i>Commutatio</i>	7	15	58	54	<i>sin.</i> 45	58 54 — 9 85683
<i>Comp. ad Circ.</i>	4	14	1	6	<i>sin.</i> 85	58 35 — 9 99893
$\frac{1}{2}$		67	0	33	<i>tan.</i> 0	29 27 — 7 93282
<i>Paral. Orb Sub.</i>	1	9	59	41	<i>Lat. δ Ber.</i>	17 93175
<i>Long. δ Geocent.</i>	4	23	55	43	<i>tan.</i> 0	40 51 — 8 07495

Of Venus

A Nno 1639. November the 24th day in the Evening, about 16 miles to the North from *Liverpool*, Mr *Jeremy Horrox* with a Telescope observed this appearance of *Venus* in the Sun.

<i>Horol.</i>	<i>Centr. dist.</i>	<i>Diam. & obser. ad Diam. ☉</i>
h ' "	' "	ut 1' 12". ad 39'.

3	15	—14	24
---	----	-----	----

3	35	—13	30
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3	45	—13	0
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3	50	—	<i>Solis occasus apparens. Venus. 3 ho. 45'.</i>
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And at 3 ho. 15' *Venus* in her Immersion or total Ingress on the South-East part of the Sun, made the Angle with the vertical circle at his center $62\frac{1}{2}$ degrees.

The Equal Time at *London* was 3h. 19', and by our Tables, the Longitude of the Sun from the first star of γ . 7s 14' 15' 26" from the *Æquinox* in $2^{\circ} 12' 22' 33''$ the Logarithm of the Earths distance 4. 993056. the semidiameter of the Sun 16' 10". and hence the semidiameter of *Venus* 39". the parallax of *Venus* from the Sun in Altitude 42". in Longitude 13" in Latitude 39". Therefore, the Geocentrick Sidereal Longitude of *Venus* 7s 14' 26' 30". and her Latitude South 10' 27".

	s	'	"	
1621	7	21	42	10
18	3	2	23	52
Novemb.	4	7	2	50
d. 24	1	8	27	4
h. 3		12	1	
' 19		1	16	
Anom. Med. &	4	9	49	13
Lon. Heliocent.	1	14	11	22
Long. ☉	7	14	15	26
Commutatio	5	29	55	56
$\frac{1}{2}$	89	57	58	
Elong. Adde.	0	0	11	5
Long. & Geocent.	7	14	26	31
				4 99306
				4 85736
	tan.	53	48	33—10 13570
	r. tan.	8	48	33—9 19025
	tan.	89	57	58—13 22829
	tan.	89	46	53—12 41854
	differ:	0	11	5 Elongatio.
	sin.	0°	4'	4"—7 0729
	sin.	0	11	5—7 5084
	tan.	0	3	51—7 0491
	Lat. & Aust.			14 5575
	tan.	0	10	30—7 4846

Of Mercury.

A Nno 1636. August the 24th, day 16h. 23'. T. M. reduced unto London, Gassendus at Dinia; by the benefit of a Telescope, observed Mercury as it were in the middle between vertical and to the left hand from Cor Leonis, yet more to the Vertex than the left; afterwards with an Astronomick radius, he took the distance of Mercury from the Star 23' 20'' and after that 22' 48''.

By the observed bearing and distance with the position of the Zodiacque. &c. We determine the Longitude of Mercury 11 or 12' in antecedence from the Star, and his Latitude between 20 and 21' more Northerly. The place of the Star, is from the first of γ . 3s 26° 40' with Latitude North (Correct by our obliquity of the Ecliptick) 27' 20''. The sidereal Longitude of the Sun 4s 13° 51' 29'' and the Log. distance of the Earth 5. 002996.

	1621.	6	6	2	0				5: 002996	
	15.	3	7	48	21				4. 487573	
	August.	4	27	34	29		tan. 73	1	41	10. 515423
	Biss. 24.	3	12	18	30		r. tan. 28	1	41	9. 726187
	b. 16.		2	43	42		tan. 47	48	18	10. 042591
	' 23.			3	55		tan. 30	25	16	9. 768778
Anom. Med. ♀		5	26	30	57		Diff. 17 23 2. Elongatio.			
Long. Heliocen.		1	8	14	53		fin. 84 23 24 9. 99791			
Long. ☉		4	13	51	29		fin. 17 23 2 9. 47534			
							tan. 2 39 23 8. 66648			
Comp. Commu.		3	5	36	36		Lat. ♀ Bor. 18. 14182			
				47	48	18	tan. 0 47 53 8. 14391			
Elong sub. .		0	17	23	2					
Lon. ♀ Geocent		3	26	28	27					

For the Longitudes from the Æquinox.

TO the Time given, finding the Præcession of the Æquinox, and adding it to the sidereal Longitude of any Planet; you have (in like manner as of the Sun and Fixt-Stars) the true Longitude of the Planet from the Æquinox.

As in the last example of *Mercury*, Anno 1636 August the 24th, &c. the Præcession is by our Tables $0^{\circ} 28' 4' 31''$. which added to the Geocentrick sidereal Longitudes there found, the place of the Sun from the Æquinox is in $\text{♊} 11^{\circ} 56' 0''$. Cor *Leonis* in $\Omega 24^{\circ} 44' 31''$. and *Mercury* in $\Omega 24^{\circ} 32' 58''$.

7. To find the time of the Mean Conjunction or Opposition of the Sun and Moon.

TO the given Year and Month (*In Tabula Motus Medij Luna a Sole*) Gather the middle motion of the Moon from the Sun, and take the Complement thereof to a Circle, from which, or the $\odot$ (gathered by the Addition or Subtraction of 6 Signs) continually subtracting the nearest lesser middle-Motions, the answerable Day, Hour, Minute, &c. is the exact middle time of the Mean $\odot$ or $\odot$ of $\odot$ and D .

Example.

Anno 1639. in *October*, I would know the exact time of the mean Opposition of the Sun and Moon.

	s	°	'	"
1641	11	14	19	57
18	7	11	58	32
Octob.	2	28	4	27
Mot. Δ a $\odot$	9	24	22	56
Comple.	2	5	37	4
$\circ$	8	5	37	4
d. 20	8	3	48	53
	1	48	11	
h. 3	1	31	26	
'	33	16	45	

Therefore the Mean $\circ$ is October the 20th. day 3 ho. 33'.

Again, in November the same year, the time of the Mean Conjunction of $\odot$ and Δ is required.

	s	°	'	"
1641	11	14	19	57
18	7	11	58	32
Novem.	3	15	59	14
Mot. Δ a $\odot$	10	12	17	43
Comple.	1	17	42	17
d. 3	1	6	34	20
	11	7	57	
h. 21	10	40	1	
'	55	27	56	

And hence the Mean $\circ$ in November is the 3. day 21 ho. 55'.

8. For the time of the true Conjunction or Opposition of the Luminaries.

1. **T**O the time of the Mean $\odot$ or $\oslash$, Compute the true Longitude of the Sun from the $\text{\AE}quinox$ and the place of the Moon first $\text{\AE}quated$.

2. If the places of $\odot$ and $\oslash$ so found be exactly the same or Opposite, the Time of the Mean and True $\odot$ or $\oslash$ are one; but if they differ (as commonly it happeneth) take the difference, and with the Mean Anomaly of $\odot$ and $\oslash$, the Anomaly of $\oslash$ being correct by the Addition or Subtraction of about half so much as she wants of or is past the $\odot$ or $\oslash$ (in *Tabula Motuum Horariorum*, &c. Under the Titles *Horar* $\odot$ *Verus* and *Horar* $\oslash$ *Pri. \AEquat.*) seek the true hourly motion of the Sun, and the first $\text{\AE}quated$ hourly motion of the Moon, the proportion shall be,

As the difference of the hourly motions, to the difference or distance of the Luminaries from $\odot$ or $\oslash$ so is one hour or $60'$ to the interval of the Mean and True $\odot$ or $\oslash$, which is always less then fourteen hours.

3. If the Moon were found wanting of the $\odot$ or $\oslash$ the Interval added, if past the $\odot$ or $\oslash$ subtracted, to or from the Mean, gives the middle Time of the True $\odot$ or $\oslash$ of $\odot$ and $\oslash$; To which Time (for farther trial) Compute again the true place of $\odot$, and of $\oslash$ first $\text{\AE}quated$, and the exact time being obtained;

4. From the place of the Moon in her Orbit subtract the place of $\oslash$ and with the residue or *Arg. Lat.* (in *Luna Tabula Latitudinis vera ac Reductionis*, &c.) find her Reduction, and then, with the mean Anomaly of $\oslash$ last found (in *Tabula Motuum Horariorum*, &c. under the Title *Horar* $\oslash$ *in Syzyg.*) the true hourly motion of $\oslash$, from which subtracting the hourly motion of $\odot$;

As the true hourly motion of $\oslash$ from $\odot$, to the Reduction, so is one hour or $60'$; to the Time of Reduction, which (Contrary to the Title of Reduction) added or subtracted to or from the Time of the True $\odot$ or $\oslash$ before found, gives the middle or equal Time of the True $\odot$ or $\oslash$ reduced to the *Ecliptick*.

Example

Example.

A *N^o 1659 in October the mean ☉ is* ————— *d h ' "*
 ————— 20 3 33 0
s . ° ' "
 The mean Anomaly of the Sun correspondent ————— 4 2 7 14
 Of the Moon. ————— 9 27 12 6

—————
 The true Longitude of ☉ from the *Æ*quinox ————— 7 7 8 16
 The first æquated place of ☾ in the Orbite. ————— 1 13 18 33
 The difference from the ☉ past ————— 0 6 10 17

—————
 The hourly Motion of ☉. ————— 0 0 2 30
 Of ☾ first æquated (to 9^s 24° of mean Anomaly.) ————— 0 0 31 46
 The difference of hourly Motions. ————— 0 0 29 16

—————
d. h. ' "
 The Interval of the Mean and True ☉ subtract ————— 0 12 38 53
 The Equal Time of the True ☉ ————— 19 14 54 7

To which Time,

The mean Anomaly of the Sun is ————— *s . ° ' "*
 Of the Moon. ————— 4 1 36 4
 ————— 9 20 18 59

—————
 The true place of the Sun. ————— *m.* 6 36 32
 Of the Moon in her Orbite. ————— *s.* 6 36 32

—————
 The Argument of Latitude. ————— 5 22 24 9
 The Reduction, Add. ————— 1 43

—————
 The true hourly motion of ☾ 32' 5". from ☉ ————— 29 35
 The time of Reduction. Subtract. ————— 3' 29"

—————
d. h. ' "
 The Equal time of the True ☉ in the *E*cliptick ————— 19 14 50 38
 ————— 9. To

9. To Calculate an Eclipse of the Moon.

TO the time of the true ϕ of $\odot$ and $\lrcorner$, with the mean Anomaly of the Luminaries (*in Tabula Motuum Horariorum, Semidiametrorum, &c.* under the Titles, *Semid. $\odot$, Semid. $\lrcorner$, Parall. $\lrcorner$, &c.*) you have their apparent Semidiameters with the Horizontal Parallax of the Moon, the Horizontal Parallax of the Sun being ever $15''$. Then from the Aggregate or sum of Horizontal Parallaxes, subtract the Semidiameter of $\odot$, and there will remain the apparent Semidiameter of the Earths shadow.

2. To the Semidiameter of the shadow add the Semidiameter of $\lrcorner$, and with the Argument of the Latitude of $\lrcorner$ in the true ϕ (*in Lune Tabula Latitudinis, &c.*) find her Latitude; if the sum of the apparent Semidiameters of the Moon and shadow of the Earth shall be greater than the Latitude of $\lrcorner$, she will be really Eclipsed at that time, else not.

3. If the Moon be found Eclipsed, from the sum of the Semidiameters of the Moon and shadow of the Earth subtract the Latitude of $\lrcorner$, the residue is the Part Deficient, and as the Semidiameter of $\lrcorner$, to 6 Digits or $360'$, so the Part Deficient, to the Digits Eclipsed.

4. The time of Reduction (according to the Title of Reduction) added or subtracted to or from the time of the true ϕ of $\odot$ and $\lrcorner$ in her Orbit first found, gives the time of the greatest obscuration.

5. As the Co-sine of the Latitude of $\lrcorner$, to the Radius, so the Co-sine of the sum of the Semidiameters of the Moon and shadow, to the Co-sine of the motion of half duration; or reducing the arches into seconds, and supposing the proportion in a right lined Triangle, from the square of the sum of the Semidiameters of the Moon and shadow, subtract the square of the Latitude of $\lrcorner$, the square root of the residue is the motion of half Duration.

6. As the true hourly motion of $\lrcorner$ from $\odot$, to one hour or $60'$, so the motion of half Duration, to the Time, which subtracted from, and added to the time of the greatest obscuration, gives the Time of the beginning and end of the Eclipse.

Example

Example.

At the Equal time of the true $\odot$. Anno 1659. October the 19th day
14 ho. 54'. 7".

The sum of the Horizontal Parallax of $\odot$ and $\sphericalangle$ is ————— 1 "
The semidiameter of the Sun subtract: ————— 55 27
————— 16 4

The semidiameter of the Earths shadow. ————— 39 23
The semidiameter of the Moon. ————— 14 55
—————

The Aggregate of semidiameters ————— 54 18
The Latitude of the Moon. North: ————— 39 37
—————

The part deficient. ————— 14 41
The Digits Eclipsed. ————— Dig: 5 54 22
—————

The time of Reduction. add. ————— 3 29
The Equal time of the Greatest Obscuration. ————— Ho. 14 57 36
—————

The æquation of Natural days. add. ————— 2 31
The Apparent time of the Greatest Obscuration. ————— Ho: 15 0 7
—————

The Motion of half duration. ————— 37 8
The time of half duration. ————— Ho: 1 15 19
—————

The beginning of the Eclipse ————— Ho: 13 44 48
The End. ————— Ho. 16 15 26
—————

But in Total Eclipses, for the Immersion and Emerfion, the proportion is. 1. As the Co-sine of the Latitude of $\sphericalangle$ in the true $\odot$ first found, to the Radius, so the Co-sine of the difference of the semidiameters of the Moon and shadow, to the Co-sine of the motion of half continuance in

in total darkness. 2. As the true hourly motion of $\textcircled{D}$ from $\textcircled{O}$ to one hour or $60'$. so the Motion to the time of Half continuance, which subtracted from and added to the time of the greatest obscuration or middle of the Eclipse, gives the time of the Immersion and Emerfion or beginning and ending of total darkness

The Observation of this forementioned Eclipse of the Moon made by Bullialdus at Paris was thus, omitting seconds.

Anno 1659. Octob. 19	{ Initium penumbrae. 13h48'		Alt. Marg. infer. $\textcircled{D}$	47° 32'
	{ Initium verum. — 13 58		Alt. Marg. infer. $\textcircled{D}$	46 24
	{ Finis verus. — 16.37		Alt. Cor. $\textcircled{O}$	39 7
	{ Finis penumbrae. — 16 43		Alt. Cor. $\textcircled{O}$	40 7

Atigit digitos VII & ultra.

Mr. Normood at Bermudos observed the Beginning at 9h. 34'. the End at 12 ho. 13'.

And by an observation of the beginning and end at London. (though perhaps less accurate) the time of the Middle was 15ho. 5'.

But for the most part in Lunar Eclipses, the crassitude of the penumbra near the limits of the perfect shadow makes the duration and digits appear more than really they are.

10. To Calculate an Eclipse of the Sun

AT the time of the true δ of $\textcircled{O}$ and $\textcircled{D}$, to the difference of their Horizontal Parallaxes add the sum of their Semidiameters; If the Aggregate or total sum shall exceed the true Latitude of the Moon, then in some part of the Earth the Sun will be Eclipsed; otherwise the Moon can not Eclipse him at that time. Again, at the time of the Visible δ of the Luminaries, where the sum of their semidiameters shall be greater than the visible Latitude of the Moon, she will there Eclipse the Sun, else not.

And to Calculate a Solar Eclipse to any given place or Longitude and Latitude of the Earth;

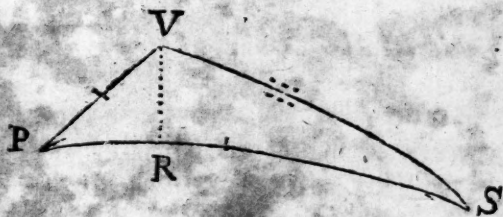
To the time of the true $\odot$ found by the foregoing rules, with the place of the Sun (in *Tabula Ascensionum Rectarum*) seek his Right Ascension and add thereto the apparent time converted into degrees and minutes, the sum is the Right Ascension of the Mid-heaven, and adding 90° its the Oblique Ascension of the Ascendent, which with the Latitude of the place of the Earth, gives (by Trigonometry, or Tables of Oblique Ascension, &c.) the point of the Ecliptick then rising, from which rejecting three signs, the residue is the 90th degree or highest point of the Ecliptick, the distance between which point and the place of the Sun being taken, and with the place of $\odot$ (in *Tabula Declinationis*) his Declination, we are next to find his distance from the Vertex and the Angle of the vertical circle with the Ecliptick, &c. as in the following Example, wherein,

Anno 1659. in November, the Apparent time of the true $\odot$ of $\odot$ and J reduced to the Ecliptick is the 4th day 2ho. 36'. 49". the place of the Luminaries in m $22^\circ 12' . 9''$. and the true Latitude of J North $46' 5''$.

Right Ascension of the Sun ————— $229^\circ 47'$
Time from Noon in *degr:* and *min:* ————— $39 \quad 12$

Right Ascension of the Midheaven. ————— $268 \quad 59$
90th degree of the Ecliptick in the *Lat:* of $51^\circ 32'$ ————— $2 \quad 27 \quad 31$

Distance of the Sun from the 90th degree ————— $35 \quad 19$
Declination of the Sun South. ————— $18 \quad 22$



Then Let S denote the Center of the Sun, P the North Pole of the æquator, V the vertex of *London*. there is given PV $38^\circ 28'$. PS $108^\circ 22'$. VPS $39^\circ 12'$. and letting fall the perpendicular VR we find (1)
 PR

P R $3^{\circ} 37'$. therefore R S $76^{\circ} 45'$. and hence (2) V S $77^{\circ} 50'$. the distance of $\odot$ from the Vertex. (3) by the distance from the Vertex $77^{\circ} 50'$. and from the 90th degree $35^{\circ} 19'$. the Angle of the Vertical Circle with the Ecliptick is found $81^{\circ} 13'$. (4) by the dist: from the vertex and the Horizontal parallax of $\triangleright$ $59' 27''$. her Parallax in Altitude is $58' 7''$. the Parallax of $\odot$ in Altitude $15''$ subtract, the residue is the Parallax of $\triangleright$ from $\odot$ in Altitude $57' 52''$. (5) by the Parallax of $\triangleright$ from $\odot$ in Altitude $57' 52''$. and the Angle of the Vertical Circle with the Ecliptick $81^{\circ} 13'$. the Parallax of $\triangleright$ from $\odot$ in Longitude is $8' 50''$. (6) by the same Paral; in Alt: $57' 52''$. and Angle $81^{\circ} 13'$, the Parallax of $\triangleright$ from $\odot$ in Latitude is $57' 11''$.

The Operation.

rad. tan.	38 28	—	9 90000
co-fin.	31 37	—	9 78936
tan.	31 37	—	9 78936
co-fin.	31 37	—	9 93022
co-fin.	76 45	—	9 36022
co-fin.	38 28	—	9 89375
V S.		19	25397
co-fin.	77 50	—	9 32375
tan.	77 50	—	10 66635
rad. tan.	35 19	—	19 85033
co-fin.	81 13	—	9 18398

rad. fin.	77 50	0—9	99013
fin.	0 59 27	—8	23786
Par. Alt. D. fin.	0 58 7	—8	22799
⊙		15	
D a ⊙ in Alt.	0 57 52		
rad. tan.	0 57 52	—8	22620
co-fin.	81 13	0—9	18398
in Long. tan	0 8 50	—7	41018
rad. fin.	0 57 52	—8	22613
fin.	81 13	0—9	99488
in Lat. fin.	0 57 11	—8	22101

Here observe that in the Oriental quadrant of the Ecliptick the Parallax in Longitude Addeth, but in the Occidental quadrant, as in this Example, it substracteth.

Therefore in respect of the Suns place $m\ 22^{\circ}\ 12'\ 9''$. the Visible Longitude of Δ is in $m\ 22^{\circ}\ 3'\ 19''$ and her visible Latitude South $11^{\circ}\ 6''$.

And because the visible δ succeeds the true, to half an hour after, viz
3h. 6' 49". operating by the preceding method, I find the parallax of δ
from $\odot$. in Longitude $12' 34''$ to be substracted, therefore from the true
half hourly motion of δ from $\odot$ $16' 58''$. I substract the difference of the
parallax in Longitude $3' 44''$. and there remaineth the visible half hourly
motion of δ from $\odot$ $13' 14''$. Then as $13' 14''$. to half an hour or $30'$ for

8' 50". to 20' 2". the Interval, which added to the time of the true δ . 2ho 36' 49". the sum is the Apparent Time of the Visible δ 2ho. 56. 51"

To which time I compute again the true places of the Luminaries with the parallax of Δ from $\odot$ in Longitude and Latitude; and the place of the Sun is m 22° 13' 0". the Moon in her Orbit 7° 22' 26' 19". the Argument of Latitude 9° 3' 12" the reduction sub. 2' 1". the true place of the Moon reduced m 22° 24' 18". and her Latitude North 47' 8".

The right Ascension of $\odot$ is 229° 47'. the time from noon in degrees and min : 44° 13' the right Ascen. of the Midheaven 274° 0'. and hence the 90th degree in Lat. 51° 32'. $\propto$ 9° 38'. distant from $\odot$ 47° 15'. the declination of $\odot$ South 18° 22' his distance from the Vertex 79° 50'. the Angle of the Vertical circle with the Ecliptick 78° 49'. the Horizontal parallax of Δ 59' 28". her parallax in Altitude 58' 32" from $\odot$ 58' 17". in Longitude 11' 18". in Latitude 57' 11" but her true Latitude is North 47' 8". therefore her visible Latitude South 10' 3". The Semidiameter of $\odot$ is 16' 7". of Δ 16' 5" the sum 32' 12". the visible Latitude of Δ subtract 10' 3". the Part Deficient 22' 9". then as the Semid. of $\odot$ 16' 7" to 6 digits. so the Part Deficient 22' 9". to the Digits Eclipsed 8d 15.

To 1 hour before the Visible δ . viz. 1h 56' 51". the visible Longitude of Δ from $\odot$ is in Antecedence 25' 57". and her visible Latitude South, 12' 54". exceeding the Latitude seen in the visible δ . 2' 51". therefore (1) as sin 25' 57" to the Radius, so tan: 2' 51" to tan: 6° 16'. the Angle of the visible way of Δ with the Ecliptick, (2) as the Radius, to sin. 10' 3". so sin. 6° 16', to sin. 1'. 6". the motion seen from the visible δ to the greatest obscuration. (3) As co-sin. 10' 3" to co-sin. 1'. 6". so co-sin. 32' 12" the sum of semid: to co-sin. 30' 36". the visible motion from the beginning of the Eclipse to the greatest obscuration, and from 30' 36". subtract 1' 6". the residue is 29' 30". the motion seen from the beginning to the visible δ . (4) As the Radius, to sin 29' 30". so the co-sine of the Angle 6° 16'. to sin 29' 19". the motion of Δ from $\odot$ in Longitude seen from the beginning to the visible δ . (5) as 25' 57", to 1 hour or 60'. so 29' 19", to 1h. 4' 34". which subtracted from the time of the visible δ 2h. 56' 51". there remaineth the time of the Beginning of the Eclipse 1h. 52' 17".

To 1 hour after the visible δ . viz. 3h. 56'. 51". the visible Longitude of Δ from $\odot$ is in Consequence 27° 13". and her visible Latitude South 6' 7" being less than the Latitude seen in the visible δ . 3' 56". therefore (1) as sin. 27' 13" to the Radius, so tan. 3' 56". to tan. 8° 18'. the Angle of the visible way of Δ with the Ecliptick. (2) as Radius to sin. 10' 3". so sin. 8° 18', to sin. 1' 27". the motion seen from the visible δ to the

the greatest obscuration. (3) as co-sin. $10^{\circ} 3''$ to co-sin $1^{\circ} 27''$. so co-sin. $32^{\circ} 12''$. to co-sin $30^{\circ} 37''$. the visible motion from the greatest obscuration to the End; and to $30^{\circ} 37''$ add $1^{\circ} 27''$. the sum is $32^{\circ} 4''$. the motion seen from the visible σ to the End. (4) as Radius, to sin. $32^{\circ} 4''$. so co-sin $8^{\circ} 18'$ to sin: $31^{\circ} 44''$ the Motion of $\mathcal{D}$ from $\odot$ in longitude seen from the visible σ to the End. (5) as $27^{\circ} 13''$ to 1 hour: so $31^{\circ} 44''$ to $1^h 9' 57''$. which added to the time of the visible σ $2^h 56' 51''$. the sum is the time of the end of the Eclipse $4^h 6' 48''$.

Lastly, the motion seen from the visible σ to the greatest obscuration being found to the hour before $1^h 6''$ to the hour after $1^h 27''$ the half sum is $1^h 16''$.

The Motion seen from the Beginning to the visible σ $29' 30''$. from the visible σ to the End $32' 4''$ the sum is $61' 34''$.

The Time of the whole Duration from the Beginning to the End of the Eclipse $2^h 14' 31''$.

As $61' 34''$ to $2^h 14' 31''$. so $1^h 16''$ to $2^h 46''$ in time, which (because the seen Lat. of $\mathcal{D}$ is decreasing) added to the time of the visible σ $2^h 56' 51''$ gives the time of the middle or Greatest obscuration $2^h 59' 37''$.

Therefore at *London* in this Eclipse of the Sun Anno 1659. November the 4th we have by calculation.

	he.	'	''
The Apparent time of	{ The Beginning,	— 1	52 17
	{ The Visible σ ,	— 2	56 51
	{ The Middle.	— 2	59 37
	{ The End.	— 4	6 48
The Digits Eclipsed 8 and 15 min.			

My worthy respected friend Mr *Laurence Rook* Professor of *Geometry*, observed the end of this Eclipse at *Highgate* near *London* just $4^h 0^m$ P. M. and the digits Eclipsed 8.

And *Bullialdus* at *Paris*, the Beginning at $1^h 58'$. the End at $4^h 16'$. the digits Eclipsed a little more than 8.

IN the Conjunction or Opposition of the Sun and Moon (*in Tabula Logarithmorum a Terra Lunae Distantiarum*) you have the Logarithm of her Distance from the Earth correspondent to her mean Anomaly. But at all other Times,

As the Sine of the Angle of Evection;
 To the Chord of Evection;
 So the Sine of the Synodical Anomaly,
 To the Distance of the Moon from the Earth.

Or otherwise,

As the Sine of the Synodical Anomaly, when more than 6
 Signs, Correct by Addition, when less by Substraction of the
 Angle of Evection,

To the Distance of the Moon from the Earth answerable to
 the mean Anomaly of Δ .

So the Sine of the simple Synodical Anomaly,

To the true Distance of the Moon from the Earth.

12. *By the Distance from the Earth, with the True Altitude, or distance of Δ from the Vertex, to find her Parallax and Visible Altitude.*

From the Log. of the distance of the Moon from the Earth, subtract
 the Log. of the Earths Semidiameter. 3. 217484. the residue is the Log.
 Tangent of an Arch, from which rejecting 45° .

As the Radius,

To the Tangent of the remaining Arch,

So the Tang. of half the Complement to a Semicircle of the
 true Distance of Δ from the Vertex,

To the Tang. of an Arch, the difference of which, and the
 said half Complement, is the Parallax of Δ in Altitude, which
 subtracted from the True Altitude of Δ , there will remain the
 Visible.

13. *By the Distance from the Earth, and Visible Altitude of Δ , to find her Parallax and True Altitude.*

As the Distance of the Moon from the Earth,

To the Sine of the Visible distance from the Vertex, or Co-
 sine of Altitude seen,

So the Semidiameter of the Earth. 1650. Log. 3. 217484.

To the Sine of the Parallax of Δ in Altitude, which added to
 the Visible Altitude of Δ , the Sum is her True Altitude.

And having the Moons True distance from the Vertex and Parallax in
 Altitude, with other necessary Data, you may by Spherical Trigonometry
 proceed to find the Angle at the Moon of the Vertical with the Circle of

R

La-

Latitude, and hence the Parallax of Δ in Longitude and Latitude, &c. which way (though most exact) I have purposely omitted in the foregoing Example of the Suns Eclipse, as a needless trouble unto Tyroes.

14. *For the distance of the Center of Δ from the Eye of the Observer, or any Point of the Earths Superficies.*

As the Sine of the visible distance of Δ from the Vertex,
To distance of the Centers of the Earth and Moon,
So the Sine of the true distance of Δ from the Vertex,
To the distance of her Center from the Eye of the Observer.

15. *For the visible Semidiameter of Δ at all Times.*

As the distance of the Center of Δ from the Eye of the Observer,
To the true Semidiameter of Δ 446. Log. 2. 649335.
So the Radius,
To the Sine of her visible Semidiameter.

Lastly, the Table of Logistical Logarithms at the end of this Book, serves with great ease for making these following, and such like Proportions.

If one Degree or 60'. give 58'. 23''. what shall 50'. 42''?

1. I seek 58'. in the head of the Table, under which, and over against 23''. by the side and left hand Column, I find 119. which is the Logistical Logarithm of 58'. 23''.

2. In like manner I find that the Logistical Log. of 50'. 42''. is 731.

3. Adding 119. and 731. together, the Sum is 850. for which Number (or the nearest unto it) I seek in the Table, and over 850. in the head is 49'. and by the side and left hand Column 20''. Therefore,

	" Log. Logist.
If 60. give 58. 23. ———	119
Then ——— 50. 42. ———	731
shall give ——— 49. 20. ———	850

So in the first Example of finding the Longitude of $\odot$ by our Tables, the mean Anomaly of the Earth was 1°. 8. 50'. 42''. but the sidereal Longitude of $\odot$ is to 1°. 8. of mean Anomaly 3°. 15°. 7'. 55''. to 1°. 9. 3°. 16°.

3°. 16'. 6". 18", the difference answerable to one Degree of middle motion is 58'. 23". and therefore to 50'. 42". it is 49'. 20". which added to 3°. 15°. 7'. 55", the Sum is 3°. 15°. 57'. 15". the true Long. of ☉ from the first * of γ.

But suppose the mean Anomaly of ☉ 6°. 0°. 35'. 24". and the Long. of ☉ required. Here to one Degree of mean Anomaly the true Motion is 1°. 2'. 7". I say

	'	"	Log. Logist.
As 60. to 2. 7.	—	—	14525
fo 35. 24.	—	—	2291
to 1. 15.	—	—	16816

And the Sum of 35'. 24". and 1'. 15". is 36'. 39". the proportional sought; which added to 8°. 8°. 20'. 0". the Sum is 8°. 8°. 56'. 39". the sidereal Long. of ☉.

To the mean Anomaly of Saturn, 6°. 24°. 49'. 1". I would know his Heliocentrick Longitude.

	s.	o.		s.	o.	'	"
To 6. 24.	it is	2. 25. 21. 23					
To 6. 25.	—	2. 26. 27. 55					
The Difference is		1. 6. 32					
	'	"	Log. Logist.				
As 60. to 6. 32.	—	—	9630				
So 49. 1.	—	—	878				
To 5. 20.	—	—	10508				
Adde 2. 25. 21. 23							
Sum 2. 26. 15. 44				Long. ♄ Heliocent.			

To the same mean Anomaly of ♄ the Log. of his Curtate distance from the Sun is required.

	s.	o.
To 6. 24.	it is	5. 956355
To 6. 25.	—	5. 956566
The Difference	—	211

In the second row, in the Head of the Table of Logistical Logarithms, looking for 211. I find the nearest lesser Number 180. with the residue 31. in the left hand Column, and in the common Angle is the Logist.

R 2

Log.

Log. 12320. then adding thereto the Logist. Log: of 49'. 1". 878. the Sum is 13198. for which I seek in the Table, and find the nearest to it, 13208. and over this in the second row in the head, 120. and in the left hand Column against it, 52. both put together, being 172. which (because the Dist. increaseth) added to 5. 956355. the Sum is, 5. 956527. the Log. of the Curtate distance of $\frac{1}{2}$ from $\odot$.

		Log. Logist.
As 60. to 211	_____	12320
So 49. 1".	_____	878
To	172	13198

5. 956355

5. 956527. Log. dist. $\frac{1}{2}$ à $\odot$ Curt.

If 58'. 23". give 60'. what shall 49'. 20". ?

In this case where 60' is put in the second or third place, the question is resolved by Subtraction; thus,

			Log. Logist.
If	_____	58. 23	_____119
give 60'.	49. 20	_____	850
shall give	50. 42	_____	731

If 1°. 2'. 7". give 60'. what shall, 36'. 39" ?

Here if we take the half of 1°. 2'. 7". and also of 36'. 39". the proportion is the same.

			Log. Logist.	
If	_____	31. 3. $\frac{1}{2}$	_____2860	Therefore If — 1°. 2'. 7". give 60'. 36'. 39". shall give 35'. 24".
give 60'.	18. 19. $\frac{1}{2}$	_____	5151	
shall give	35. 24. —	_____	2291	

For the Log. Tangent of 83°. 47'. 34".

Of 83. 47. it is 10. 962856

Of 83. 48. — 10. 964031

The Difference — 1175

For this purpose I take Minutes in the Table of Logist. Log. for seconds, and under 1140. in the second row in the head, and over against 35. in the left hand Column, I find the Logist. Log. of 1175. &c.

As

(111)

" Log. Logist.

As 60. To 1175 — 4863

So 34 — 2467

To — 666 — 7330

Tan. $83^{\circ} 47' 0''$ — 10.962856. Add.

Tan. $83^{\circ} 47' 34''$ — 10.963522.

But if the Arch to the Log. Tang. 10.963522. were required, I find in the Table of Sines and Tangents, that it exceeds the Log. Tang. of $83^{\circ} 47'$. by 666. and the Difference answerable to one Minute, is 1175. as before. Then,

As — — — 1175 — 4863

To $60''$. So — 666 — 7328

To 34 — 2465

Therefore the Arch to the Log. Tang, 10.963522. is $83^{\circ} 47' 34''$.

OBSERVATIONS

OBSERVATIONS & CALCULATIONS
Compared.

The Times of six Autumnal, and three Vernal Æquinoxes, diligently observed by Hipparchus at Alexandria, with an Armilla (Ptol. lib. 3. cap. 1.) were as followeth.

The Year before Christ.	Time by Observation at Alexandria.	Equal Time at London.	Place of ☉ by our Tables.
	d	d h '	s o ' "
162—	Sept. 27. about Sun setting.	27. 3. 57	18 0. 37. 52
159—	Sept. 27. in the Morning.	26. 15. 57	18 0. 24. 16
158—	Sept. 27. at Noon.	26. 21. 57	18 0. 24. 43
147—	Sept. 26. at Mid-night.	26. 9. 57	18 0. 14. 40
146—	Sept. 27. in the Morning.	26. 15. 57	18 0. 15. 8
143—	Sept. 26. in the Evening.	26. 3. 57	18 0. 1. 30
146—	March. 24. Morn. & about 11 ^h . A. M.	23. 20. 41	✕ 29. 55. 5
135—	March. 23. after Mid-night.	23. 11. 0	✕ 29. 51. 4
128—	March. 23. about Sun setting.	23. 3. 41	✕ 29. 51. 3

The chief cause of these differences, was undoubtedly the Suns Refraction, unknown to Hipparchus; whence in the Horizon, the true place of ☉ being $\approx 0^{\circ} 38'$. he would appear exactly in the Plane of the Æquinoctial, as in the first Observation; and the nearer the Horizon, the greater the difference, as may be considered in some of the rest. But the exact Time when the Observation was made, is only related in the first Vernal Equinox, where the Armilla was on both sides equally illuminated, about the 5th. hour of the day.

The

The Calculation of the Suns place, to the Year before Christ. 146.
March the 23. day 20^h. 41'.

	S.	°.	'	''	S.	°.	'	''
Anno Chri.—1	6.	23.	19.	56	0.	6.	16.	0
Sub. ——— 200	11.	28.	50.	10	0.	2.	40.	0
Ante Chri. 200	6.	24.	29.	46	0.	3.	36.	0
Add. ——— 40	11.	29.	46.	2		32.	0	
14	11.	29.	25.	33		11.	12	
Martii. ———	1.	28.	9.	4			8	
Die. ——— 23	0.	22.	40.	9			3	
Ho. ——— 20			49.	17				
' ——— 41			1.	41	0.	4.	19.	23. Prac.
Anom. Med. $\ominus$ 9	15.	21.	32					
Long. $\odot$ α 1 * γ	11.	25.	35.	42				
Præfss. $\mathcal{A}$ quin. $\odot$	4.	19.	23					
Long. $\odot$ ab $\mathcal{A}$ qu.	11.	29.	55.	5				

Anno Christi, 882. September the 18th. day, 13^h 15' at Araçta, by the careful Observations of Albategnius of the place of $\odot$ in the Meridian, was the apparent time of the Autumnal $\mathcal{A}$ quinox; He likewise observed the Time from the Autumnal $\mathcal{A}$ quinox to the Vernal 178. days, 14. hours, 30. min. but from the Vernal $\mathcal{A}$ quinox to the Autumnal 186. days, 14. hours, 45. Albategnius de Scientia Stellarum.

The Parallax of $\odot$ in the Meridian was 9'. Therefore the Vernal $\mathcal{A}$ quinox was 9' of Time sooner, and the Autumnal 9' later than observed; and hence,

Anno Christi.	The Correct Time of the Ingress of $\odot$ at Araçta.	Equal Time at London.	Place of $\odot$ by our Tables.
	d. h. '	h. '	S. °. ' ''
882	in γ March. 15. 22. 21	18 58	γ $\odot$. $\odot$ 17
882	in $\mathcal{A}$ Septemb. 18. 13. 24	10. 17	$\mathcal{A}$ $\odot$. $\odot$ 10
883	in γ March. 16. 3. 36	0. 13	$\times$ 29. 58. 53

Anno

Anno Christi, 1290. in some Meridian passing through *France*, and near the Longitude of *London*. The Vernal *Æquinox* was observed *March* the 12th day, 16 hours.

And *Anno 1303.* *Prophatius Judeus* with other Observators, proved the Ingress of $\odot$ in γ *March* the 12th day, 20 hours. See *Astronomia Philolaica*, Lib. 2. Pag. 70, & 71.

Anno 1290. at *London*. The Equal Time of the Vernal *Æquinox* was by our Tables, *March* the 12th day, 16 hours, 11'.

And *Anno 1303.* *March* the 12th day, 19 hours, 49'.

And touching the Apparent Place of the Sun at all Times, we affirm, that the Fixt Sidereal Longitude of the Aphelion, as well of the Earth, as each other Primary Planet, will sufficiently appear by the most Certain Observations of all Ages, especially of these last 200 years, and shall conclude with these which follow of the Tres-noble *Tycho Brahe* at *Uraniburg*, agreeing with those of Mr. *Edward Wright* at *London*, *Anno 1594, 1595, 1596 & 1597.* as you may see in his Correction of the Errors of Navigation.

Obser.

Observations of the Suns Meridional Altitudes made at *Uraniburg* in
Denmark, by the Noble Lord of *Knudstrop*, *Tycho Brache*, where
the Altitude of the Pole is determined by himself and *Longomontanus*,
550. 54'. 30"

A. De. Mart.	Alt. ☉ Obser.	Alt. Correct. per Paral.	Declinario.	Loc. ☉ Obser	E. Tab. Nostr.	Differ.
	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1583. 14	35. 22. 30	35. 22. 42	Bor. 1.17.12	γ. 3.13.41	γ. 3.13.12	— 0. 29
1584. 11	34. 29. 55	34. 30. 7	Bor. 0.24.37	γ. 1. 1.44	γ. 1. 0.15	— 1. 29
1585. 13	35. 10. 45	35. 10. 57	Bor. 1. 5.27	γ. 2.44.11	γ. 2.44.28	+ 0. 17
1586. 11	34. 18. 30	34. 18. 42	Bor. 0.13.12	γ. 0.33. 6	γ. 0.31.31	— 1. 35
1587. 12	34. 36. 15	34. 36. 27	Bor. 0.30.57	γ. 1.17.37	γ. 1.16.28	— 1. 9
1588. 12	34. 53. 30	34. 53. 42	Bor. 0.48.12	γ. 2. 0.54	γ. 2. 1.22	+ 0. 28
1589. 11	34. 24. 55	34. 25. 7	Bor. 0.19.37	γ. 0.49.12	γ. 0.47.42	— 1. 30
1590. 11	34. 18. 35	34. 18. 47	Bor. 0.13.17	γ. 0.33.19	γ. 0.33.19	0. 0
1593. 10	34. 1. 30	34. 1. 42	Auft 0. 3.48	κ.29.50.28	κ.29.50. 8	— 0. 20
1594. 10	33. 55. 20	33. 55. 32	Auft 0. 9.58	κ.29.35. 0	κ.29.35.44	+ 0. 44
1596. 11	34. 30. 45	34. 30. 57	Bor. 0.25.27	γ. 1. 3.50	γ. 1. 5.41	+ 1. 51
1597. 10	34. 2. 20	34. 2. 32	Auft 0. 2.58	κ.29.52.34	κ.29.51.56	— 0. 38
Sept.	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1583. 13	34. 13. 20	34. 13. 32	Bor. 0. 8. 2	κ.29.39.51	κ.29.38.49	— 1. 2
1584. 12	34. 18. 55	34. 19. 7	Bor. 0.13.37	κ.29.25.51	κ.29.24.32	— 1. 19
1585. 10	35. 11. 40	35. 11. 52	Bor. 1. 6.22	κ.27.13.30	κ.27.12.30	— 1. 0
1586. 13	34. 7. 0	34. 7. 12	Bor. 0. 1.42	κ.29.55.44	κ.29.54.53	— 0. 51
1587. 12	34. 37. 0	34. 37. 12	Bor. 0.31.42	κ.28.40.30	κ.28.41.42	+ 1. 12
1588. 12	34. 18. 20	34. 18. 32	Bor. 0.13. 2	κ.29.27.19	κ.29.26.21	— 0. 58
1589. 9	35. 35. 0	35. 35. 12	Bor. 1.29.42	κ.26.14.55	κ.26.15.28	+ 0. 33
1590. 12	34. 30. 15	34. 30. 27	Bor. 0.24.57	κ.28.57.26	κ.28.57.47	+ 0. 21
1592. 10	35. 5. 5	35. 5. 17	Bor. 0.59.47	κ.27.30. 2	κ.27.30.22	+ 0. 20
1594. 13	34. 6. 20	34. 6. 32	Bor. 0. 1. 2	κ.29.57.25	κ.29.58.31	+ 1. 6
1596. 14	33. 30. 10	33. 30. 22	Auft 0.35. 8	κ. 1.28. 7	κ. 1.27.21	— 0. 46
April.	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1582. 27	50. 52. 0	50. 52. 10	Bor.16.46.40	δ.16.22.43	δ.16.21.33	— 1. 10
1583. 26	50. 30. 45	50. 30. 55	16.25.25	δ.15. 9.30	δ.15. 9.41	+ 0. 11
1584. 30	51. 48. 30	51. 48. 40	17.43.10	δ.19.45.14	δ.19.44.44	— 0. 30
1585. 26	50. 39. 20	50. 39. 30	16.34. 0	δ.15.38.54	δ.15.39.31	+ 0. 37
1586. 27	50. 52. 30	50. 52. 40	16.47.10	δ.16.24.28	δ.16.23.23	— 1. 5
1587. 29	51. 20. 35	51. 20. 45	17.15.15	δ.18. 3.39	δ.18. 5. 0	+ 1. 21
1588. 27	51. 0. 20	51. 0. 30	16.55. 0	δ.16.51.51	δ.16.53.12	+ 1. 21
1596. 26	50. 45. 30	50. 45. 40	16.40.10	δ.16. 0.10	δ.15.59. 2	— 1. 8
Julij.	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1582. 28	50. 40. 35	50. 40. 45	Bor.16.35.15	δ.14.16.48	δ.14.17.26	+ 0. 38
1584. 28	50. 31. 15	50. 31. 25	16.25.55	δ.14.48.47	δ.14.47. 9	— 1. 38
1586. 27	50. 56. 30	50. 56. 40	16.51.10	δ.13.21.35	δ.13.21.42	+ 0. 7
1587. 27	51. 1. 0	51. 1. 0	16.55.30	δ.13. 6.24	δ.13. 7.47	+ 1. 23
1589. 29	50. 18. 15	50. 18. 25	16.12.55	δ.15.32.54	δ.15.32.38	— 0. 16
Junij.	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1586. 12	57. 35. 36	57. 35. 44	Bor.23.30.14			
1587. 14	57. 34. 30	57. 34. 38	23.29. 8			
1593. 11	57. 35. 0	57. 35. 8	23.29.38			
Decem.	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "	o / ' "
1589. 15	10. 44. 48					
1590. 10	10. 43. 15					
1594. 11	10. 41. 10					

21 Lunar Eclipses, of which 19 were observed by the Ancient *Babylonian* Astronomers, *Hipparchus*, and *Ptolemy*; related by *Ptol. Lib. 4.* the two last by *Albategnius*, the first at *Aradta*, the second at *Antioch*.

Years before Christ	Equal Time at London. M.D.H.	True Place of the Sun. s o ' "	Distance of ☉ from ☽ s o ' "	Mean Anom. of ☉ s o ' "	In her Orbit Compt. s o ' "	Diff. from Obs. ' "	Dig. Observed.	Dig. and Min. Com.
721	Mar. 19. 6.24	☿ 21.48.41	6. 1.28.39	2. 3.47.41	☿ 21.35.24	-12.57	Total.	18.45
720	Mar. 8. 8.57	☿ 10.54.19	6. 9.19.24	0.10.11.20	☿ 11. 3.23	+11. 9	3. A	1.20
720	Sep. 1. 5.45	☿ 1.16.27	0. 9. 3.30	5.10.56.59	☿ 0.46.14	-28.11	6.p.B.	5.15
621	Apr. 21. 14.36	☿ 24.50.48	11.20.29.12	11. 8. 2.58	☿ 25. 6.49	+13.53	3. A	1. 5
523	Julij. 16. 8.10	☿ 16.59.34	5.22.40.13	0.26.16.36	☿ 16.31. 7	-30. 6	6. B	5.50
502	Nov. 19. 8.27	☿ 21.50. 9	11.20.21.26	0. 1. 4. 8	☿ 21.58.36	+ 6.17	3. A	0.30
491	Apr. 25. 7.56	☿ 28.56.12	11.19.13. 5	3. 8.23.15	☿ 28.52.32	- 6. 4	2. A	0.24
383	Dec. 22. 16.15	☿ 26.57.12	5.18.57.37	7.16. 6.51	☿ 26.47.11	-12.28	☿ 26.	0.52
332	Jun. 18. 6. 8	☿ 20.59.43	11.22.24.33	0.26.10.28	☿ 20.47.32	-13.54	☿ 20.	5.20
282	Dec. 12. 7.53	☿ 16. 9.1	5.26.56.29	5.29.37.47	☿ 16. 9.31	- 0.23	Total	16.35
201	Sep. 22. 4.56	☿ 26. 9. 4	1.23.36. 1	9.29. 7.33	☿ 26.18.58	+ 8.27	7. A	8.22
200	Mar. 19. 11. 3	☿ 25.41.51	3. 2.35. 8	3.18. 0.18	☿ 25.52.51	+11.35	Total.	17. 1
200	Sep. 11. 12.17	☿ 15.18.31	0. 1.31.11	8. 8. 6.51	☿ 15. 3. 3	-15. 7	Total	19.10
174	Apr. 30. 11.55	☿ 6. 5. 2	0. 8. 3.57	5.12.19.19	☿ 6. 3.54	+ 0.41	7. B	7.13
141	Jan. 27. 7.23	☿ 4.36.15	6. 9.55.38	5.27.11.15	☿ 4.37.32	+ 3.30	3. A	3.39
of h.								
113	Apr. 5. 6. 1	☿ 14.30.24	11.19. 7. 9	8.10.58.57	☿ 14.21.51	-10.58	2. A	0.32
133	May 6. 8.30	☿ 14.32.13	5.25.32. 3	10.13.25.19	☿ 14.42. 1	+ 8.47	Total.	12.14
134	Oct. 20. 8.47	☿ 16.19.55	0. 5.30. 5	2. 3.58. 4	☿ 16.20.51	+ 2.11	10. B	10.10
134	Mar. 5. 13.56	☿ 14.49.25	5.20.35.14	4.25.18.14	☿ 15.17.26	+25.57	6. B	4.20
83	Jul. 23. 4.59	☿ 4. 6.56	0. 5.46.20	3.23.42.23	☿ 4. 5.51	+ 0.14	11. B.	10.49
901	Aug. 2. 12.35	☿ 14.39. 3	0. 5. 2.10	3.20.46.56	☿ 14.43.53	+ 5.58	Total.	12.12

The Place of the Moon computed in 21 Eclipses, observed by
Tycho Brahe at *Uraniburg*, *Progymn. Pag. 67.* and 1 of *Longomontani*
 at *Hafnia*.

Anno Dom	T. Æq. Londin.	Loc. ☉ verus	Dist. ☉ à 68	Anom D med.	Minorb. Comp.	Diff.ab Obs.
	M.D.H.	s o ' "	s. o. ' "	s. o. ' "	s. o. ' "	' "
Uranib.	1573 Dec. 8. 7.13	♌ 26.50. 3	6. 1.51.58	7.25. 4.45	♐ 26.53. 9	+ 3. 31
	1576 Oct. 7.10.42	♌ 24.33.52	5.24.21.37	2. 6.10.18	♐ 24.28. 9	- 7. 0
	1577 Apr. 2. 7.46	♌ 22.40.38	0. 1.50.23	7. 7. 4.39	♌ 22.42.32	+ 2. 19
	1577 Sep.26.12.17	♌ 13.27.18	6. 2. 0. 2	0.12. 2.21	♐ 13.20. 3	- 6. 48
	1578 Sep.15.12.34	♌ 2.21.56	6. 9.39.29	10.17.11.56	♐ 2.23.43	+ 3. 57
	1580 Jan. 31. 9.24	♌ 21.24.27	11.25.19.45	1.17. 9.48	♌ 21.17. 0	- 8. 17
	1581 Jan. 19. 9.12	♌ 10. 1. 2	0. 2.41. 7	11.22. 3.35	♌ 9.59.45	- 0. 40
	1581 Jul. 15.16.20	♌ 2.44.52	6. 4.48.18	4.28.26.43	♌ 2.48.41	+ 4. 54
	1584 Nov. 7.12.18	♌ 25.51.18	0. 2. 1.57	4. 7.56.57	♌ 25.52.37	+ 1. 47
	1587 Sep. 6. 8.36	♌ 23.11.36	11.24. 3.59	10. 2. 4. 0	♌ 23.17. 4	+ 4. 7
	1588 Mar. 2.14. 7	♌ 22.44. 8	6. 3. 2.48	3.20.38.13	♌ 22.44.46	+ 1. 20
	1590 Dec.30. 6.10	♌ 19. 6.19	5.24. 6. 7	9.12.26.27	♌ 19.12.46	+ 5. 6
	1592 Jun. 14. 9.27	♌ 3.14.37	0. 5.25.13	1. 4.48. 4	♌ 3. 4.45	- 8. 39
	1592 Dec. 8. 6.51	♌ 27.12.45	6. 9.45.24	6. 5.53.18	♌ 27.15.23	+ 4. 49
	1594 Oct.18.18.34	♌ 5.31.41	5.24. 2.50	2. 3.23.34	♌ 5.27. 3	- 5. 50
	1595 Apr.13.15.30	♌ 3.20.48	0. 1.14.23	7. 4.13.34	♌ 3.18.35	- 1. 56
	1595 Oct. 7.19.39	♌ 24.19.48	6. 1.36.19	0. 8.59.12	♌ 24.11.59	- 7. 27
	1596 Apr. 2. 8.24	♌ 23. 5.28	0. 9.46. 5	5.18.25.57	♌ 23.11.56	+ 8. 30
	1598 Feb.10.17.18	♌ 2.27. 6	11.25. 6.17	1.14.24.10	♌ 2.20.55	- 7. 18
	1598 Aug. 6. 7. 2	♌ 23.22.13	5.25.22.27	6.11.18.58	♌ 23.26. 6	+ 2. 50
	1599 Jan. 30.17. 4	♌ 21. 6.45	0. 2.30.42	11.19.16.52	♌ 21. 6.51	+ 0. 40
Hafnia.	1609 Jul. 6.11.31	♌ 24.10.41	11.27.19.34	2 23.51.34	♌ 24.11.46	+ 0. 29

The Calculations of the Place of the D in 18 Eclipses, observed by *Gassendus, Langrenus, Hevelius, Ricciolus, Bullialdus*, and others at the undernamed Places.

Locus. Obfer.	Anno. Dom.	T. Æq. Londi- nens.	Loc. $\odot$ verus	Dist. $\odot$ $\Delta\odot$	Anom. ϵ med.	D in orb. Comp.	Diff.ab Obfer.
		M. D. H.	s o ' "	s o ' "	s o ' "	s o ' "	' "
Aqua Sextia.	1620	Jun. 4.12.47	Π 24. 3.59	5.28.17.56	10.21.35.12	Γ 24. 7.20	+ 2. 58
Brugella.	1624	Sept. 16. 8. 1	$\simeq$ 4 0. 4	0. 1. 5.57	8. 5.41.47	Υ 4. 1.22	+ 1. 33
Paris.	1625	Mar. 13.12.57	Υ 3.36.53	6.10. 8.58	1.23.56.58	$\simeq$ 3.29. 3	- 5. 34
Aqua Sextia.	1628	Jan. 10. 9.21	$\approx$ 0.27.42	6. 1.41.30	7.18. 7.17	$\odot$ 0.31.44	+ 4. 25
Bruxel.	1630	Nov. 9.10.39	Π 27.38.33	5.23.37.54	1.28. 1.32	$\odot$ 27.37.44	- 2. 16
Tubing.	1631	Oct. 29.11. 1	Π 16.17.45	6. 1. 1.56	0. 3.13.50	$\odot$ 16.15.16	- 2. 15
Dinia.	1634	Mar. 4. 8.49	$\propto$ 24.20.36	11.24.27.28	1. 8.38. 9	Π 24.16.22	- 5. 30
Aqua Sextia.	1635	Feb. 21. 8.20	$\propto$ 13. 7.38	0. 1.59.14	11.13.28. 8	Π 13. 6.27	- 0. 44
Paris.	1635	Aug. 17.14.56	Π 4.20.59	6. 2.35.50	4.19.33.51	$\propto$ 4.15.51	- 4. 33
Dinia.	1636	Feb. 10.10.16	$\propto$ 1.56 7	0. 9.32.44	9.19.31.36	Π 1 55.19	+ 1. 20
Bruxell.	1638	Dec. 10.14. 1	Γ 29.23. 0	0. 1.45.29	4. 0.45.52	Π 29.18.54	- 3. 42
Danzick.	1641	Oct. 8. 7.10	$\simeq$ 25.38.59	11.22.42.46	9.23.10. 1	Υ 25.42.41	+ 2. 2
Bononia.	1642	Apr. 4.13.37	Υ 25. 6.54	6. 1.37. 7	5.12.14.46	$\simeq$ 25. 6.53	+ 0. 21
	1642	Sept. 27.15.57	$\simeq$ 14.50. 9	0. 0.39.53	8. 2.57.14	Υ 14.49.58	- 0. 2
	1643	Sept. 17. 6.46	$\simeq$ 4.20.20	0. 8.56.49	6.16. 1.29	Υ 4.19. 9	+ 0. 49
Paris.	1645	Jan. 31. 7. 0	$\approx$ 22.32.34	5.23.44. 6	9. 4.46.31	$\odot$ 22.37.21	+ 3. 22
Danzick.	1647	Jan. 10. 9.19	$\approx$ 0.51.13	6. 9.35.47	5.29. 6.45	$\odot$ 0.52.10	+ 3. 6
	1654	Aug. 17.10.57	Π 4.34.32	6.10.19.38	2.28.24.17	$\propto$ 4.29.18	- 2. 56

Eclipses of the Sun, and Diameters of $\odot$ and D observed.

Anno 1567. April the 9th. day, even about Noon, *Christopher Clavius* at Rome observed the whole body of the Moon interposed between the Sun and his sight, so that there appeared a bright Circle of the body of the Sun encompassing the Moon on all parts. *Clavius in Spher. Jo. de Sacro Bosco. Pag 594. Edit. post.*

The apparent Time of the Visible $\odot$ of $\odot$ and D at Rome, was by our Tables, April the 9th day, $0^h. 5'. 30''$. The mean Anomaly of D $3^{\circ}. 7'. 21''. 49''$. The Argument of her Latitude $5^{\circ}. 24'. 49''. 35''$. The true Longitude of the Sun, and Visible Place of the D $\Upsilon. 28^{\circ}. 34'. 45''$. The Latitude of D seen $0'. 3''$ North. The true Semidiameter of $\odot$. $15'. 49''$. The Visible Semidiameter of D . $15' 38''$. Therefore the remaining Circle or Ring of the Sun, was on the North Part $8''$. and on the South Part $14''$.

Anna

Anno 1621. May the 11th, *Gassendus* at *Aqua Sextia*, observed an Eclipse of the Sun, his Altitude at the Beginning $25^{\circ} 30'$. h. $7^h 5' 32''$ A. M. at the end $51^{\circ} 17'$. h. $9^h 31'$. The Digits Eclipsed 9 and 23'.

Anno 1630. May the 31st, *Gassendus* at *Paris* observed the Beginning of the Sun's Eclipse at $6^h 16'$. the middle at $7^h 12'$. P. M. the Digits 11 and 32'.

Dr. Bainbridge at *Oxford*, the Beginning at $5^h 58'$. the End at $7^h 48'$.

Anno 1633. March the 29th. day $3^h 18'$. was the beginning of a Solar Eclipse, observed at *Paris*.

Anno 1639. May the 22d. day, $4^h 1' 46''$. P. M. by observation at *London*, was the Beginning of an Eclipse of the Sun, the End at $6^h 10' 27''$. The Digit, $9. 24'$. of which, and the 3 next here following observed at *London*, you may see *Dr. Twisden's* Miscellanies. *Bullialdus* at *Paris* observed the Beginning of this Eclipse, at $4^h 21'$. The Middle $5^h 27'$. The End $6^h 25'$.

Anno 1645. August the 11th. at *London*, The Beginning of the Sun's Eclipse was by observation at $9^h 53'$. Inclining 25° . from the Supream Point of his visible Periphery to the West: at $10^h 49'$. the Digits were 5. and afterwards $5 \frac{4}{5}$.

Anno 1649. October the 25th. at *London*. The beginning of a Solar Eclipse was observed at $0^h 41' \frac{1}{2}$. The Middle $1^h 36'$. The End $2^h 36' \frac{1}{2}$. The Digits $4 \frac{1}{2}$.

Anno 1652. March the 29th. at *London*, $10^h 29'$. by observation was the Middle of an Eclipse of the Sun. And *Mr. William Leybourn* observed the End at $11^h 42'$. but by *Dr. Twisden* the middle was at $10^h 33'$. and end at $11^h 46'$. The Digits eclipsed 11.

Bullialdus and several others at *Paris* observed the Beginning at $9^h 30'$. the End at $11^h 50'$. the Digits eclipsed were by the observation of *Bullialdus* $10^{\circ} 25'$. Of *J. Bachet* Math. Professor, *D. Picart* and others, $10. 28'$.

Gassendus at *Dinia* observed the Beginning at $9^h 43'$. the Middle $10^h 51'$. and the End (of which he was less confident) $11^h 58'$. the Digits $9. 24'$. the Semi-diameter of $\odot$ $15'. 29''$. of Δ $15'. 50''$. that is as 1000 to 1033.

Hevelius at *Dantzick* observed the Beginning at $11^h 3'. 21''$. the Middle $12^h 10'. 35''$. the End $1^h 10'. 2''$. the Digits $9 \frac{3}{4}$. and the proportion of the Semidiameter of the Sun, to the Semidiameter of Δ as 1000 to 1033, with which our Tables do exactly agree.

Anno 1654. August the 2d. day at *London*, by the observation of *Mr. William Leybourn*, the Middle of the Eclipse of the Sun was at $9^h 4' \frac{1}{2}$ A. M. the End $10^h 16'$. the Digits $10. \frac{1}{2}$. or $10. \frac{1}{3}$. *Mr. Lawrence Rook*
ob-

Observed the Digits $10\frac{1}{2}$. and Dr. Wybard took the Altitude of $\odot$ at the end of this Eclipse 48° precisely, $10^h. 17'$. Dr. Wallis at Oxford observed the beginning at $7^h. 45'$. the end $10^h. 14'$. the Digits 10 . Hevelius at Dantzick observed the beginning of this Solar Eclipse at $9^h. 25'. 15''$. the Semidiameter of the Sun, $15'. 41''\frac{1}{2}$. of the Moon, $15'. 53''\frac{1}{2}$. and by our Tables the Semid. of $\odot$ was $15'. 43''$. of $\textcircled{D}$ $15'. 55''$.

Anno 1656. January the 16th, Hevelius at Dantzick observed the beginning of the Eclipse of $\odot$ at $1^h. 51'$. P. M. and about the middle, at $3^h. 11'$. the Digits were a little less than 7. the Semidiameter of $\odot$ $16'. 13''$. of $\textcircled{D}$ $14'. 20''$. By our Tables the Semidiameter of $\odot$ was then $16'. 10''$. of $\textcircled{D}$ $14'. 20''$.

Anno 1661. March the 20th, Hevelius at Dantzick observed another Eclipse of the Sun, the beginning at $10^h. 13'. 15''$. the middle $11^h. 20'$. the end $12^h. 27'. 3''$. the Digits 7. $52'$. the Semidiameter of $\odot$ $15'. 54''$. of $\textcircled{D}$ $16'. 34''$. which our Tables give $15'. 54''$. and $16'. 31''$.

The farther Tryal of the near agreement of our Numbers with these and other careful Observations of Solar Eclipses we shall here leave unto others.

But touching the apparent Diameter of the Moon at all Times, Ricciolus in his new *Almagest*, Tom. 1. Part 1. Pag. 230. besides the Concordant Observations of Gassendus and Langrenus, relates his own, by which he finds the Diameter of the Apogaeon Moon in the Quarters, between 28 and 27'. Of the Apogaeon Full Moon $29'$. or $28'\frac{1}{2}$. Of the Perigaeon Full Moon $34'$. at most, and commonly less; Of the Perigaeon Moon in the Quarters between 35 and 34'. but this always evidently greater than in the Perigaeon Full Moons: And by our Lunar Theory and Tables in respect of the Earths Center.

The Apparent Diameter of $\textcircled{D}$ is

In Apogaeon and $\square$ to $\odot$.	27. 31.
In Apogaeon and δ or ρ to $\odot$.	28. 38.
In her mean Distance from $\odot$.	30. 40.
In Perigaeon and δ or ρ to $\odot$.	33. 0.
In Perigaeon and $\square$ to $\odot$.	34. 38.

And now concerning the Secondary Inequality of the Moon, &c. The Equal Times at London, with the Calculation by our Tables, to 23 Observations of Tycho Brahe, Gassendus, and Bullialdus, are these.

Anno. Mens. D. H. ' "	Loc. Qverus s o ' "	Anom Dmed s o ' "	Loc D Comput. s o ' "	Loc D Obser s o ' "	Diff. r. " "
1586. Sept. 22. 14. 24	♌ 9.24.15	2. 5.32.36	♏ 7.24.24	♏ 7.25	+ 0.36
1587 Jan. 9. 6. 14	♏ 29.15.56	1.15.10.52	♏ 0.50.10	♏ 1. 0	+ 9.50
1587 Jan. 15. 14. 21	♏ 5.42.39	4. 7.59.22	♏ 25.40.18	♏ 25.38	- 2.18
1587 Aug. 17. 18. 45	♏ 4. 8. 16	1.16.17.31	♏ 26.16.32	♏ 26.21	+ 4.28
10. 3.10	♏ 28.36. 3	0.27.27.14	♏ 6.49.33	♏ 6.47	- 2.33
11. 4.17	♏ 29.40. 6	1.11. 7.35	♏ 19.22.24	♏ 19.20	- 2.24
14. 7.46	♏ 2.52.41	2.22.13. 3	♏ 29. 0.48	♏ 29. 5	+ 4.12
15. 9. 8	♏ 3.57.25	3. 6. 1.36	♏ 13.11.43	♏ 13.13	+ 1.17
1594 Dec. 19. 15. 3	♏ 8.17.26	5. 1.30.27	♏ 13.49.36	♏ 13.49	- 0.36
20. 17.13	♏ 9.24.10	5.15.45. 8	♏ 29.42.55	♏ 29.44	+ 1. 5
21. 17.43	♏ 10.26.40	5.29. 5.21	♏ 14.27.16	♏ 14.28	+ 0.44
22. 18.49	♏ 11.30.42	6.12.45.10	♏ 29.20.37	♏ 29.27	+ 6.23
25.20.54	♏ 14.39.40	7.23. 4.56	♏ 11.59.17	♏ 12. 3	+ 3.43
26.21.16	♏ 15.41.48	8. 6.20.49	♏ 25.34.29	♏ 25.25	- 9.29
1623 Jun. 25. 9. 26	♏ 13.14.35	4.20.17.19	♏ 18.35.38	♏ 18.33	- 2.38
1627 Jun. 7. 10. 1	♏ 26. 9.14	9. 3.22.56	♏ 24.54.22	♏ 24.52	- 2.22
1634 May. 30. 7. 33	♏ 18.43.22	3. 4.41.27	♏ 27.20.16	♏ 27.22	+ 1.44
1634 Dec 20. 5. 47	♏ 9.12.33	7.28.59.11	♏ 24.19.51	♏ 24.17	- 2.51
1638 Jan. 14. 7. 40	♏ 5. 2.24	4. 5.51.42	♏ 25. 8.46	♏ 25. 1	- 7.46
1641 Apr. 3. 7. 43	♏ 24. 8. 9	11.27.14.55	♏ 3.54.16	♏ 3.51	- 3.16
1642 Jun. 10. 9. 39	♏ 29.34.54	5.16.43.14	♏ 28.14.40	♏ 28.10	- 4.40
1641 Jun. 14. 10. 56	♏ 3.26.34	7. 9.40.43	♏ 29.22.20	♏ 29.28	+ 5.40
1643 Sep. 23. 14. 20	♏ 10.34.12	9. 8.32. 2	♏ 3.33.37	♏ 3.37	+ 3.23

The first 14 of these Observations being Tycho's were all in, or not far from, the 90th degree of Ecliptick; the other 9 of Gassendus and Bullialdus, are gathered by applications of the Moon to fixt Stars and their visible Longitude and Latitude correct by Parallax.

In the observation of 1627. *June* the 7th. 10^h. 30'. Temp. App. at *Dinia*, the Moon began to cover and Eclipse *Cor. S.*, not much above a quarter of the dark Semi-circle from her lower Horn. The Equation of the Nodes, was by our Tables 1°. 36'. 18". Subtr. The Argument of Latitude 0°. 16°. 5'. 52". The true Latitude of Δ 1°. 26'. 50". *Bor.* Observed 1°. 26'. 20".

1638. *Janu.* the 14th. 8^h. 1'. T. A. at *Dinia*, when the upper limb of the Moon covered the brightest of the Pleiades, the Equation of the Nodes was 1°. 15'. 4". Add. The Argument of Latitude 4°. 8°. 39'. 46". and the true Lat. of Δ Computed 4°. 6'. 2". *Bor.* Observed 4°. 6'. 50".

1641. *April* the third day 8^h. 8'. T. A. at *Paris*, the Moon entered upon the Northern Eye of δ , $\frac{2}{3}$ parts of the obscure Semi-circle from her inferior Horn. The Equation of the Nodes was 1°. 43'. 36". Subtr. The Argument of Lat. 6°. 22°. 49'. 19". The true Lat. of the Δ Computed 1°. 59'. 9". *Aust.* Observed 2°. 0'. 20".

By which 3 Latitudes and some other, the Variation of the Nodes of Δ will best appear.

*For the Precession of Aequinox, with the true Motion
of η , ν , σ , φ , ϖ .*

In the Year before Christ, 283. *January* the 29th in the end of the third hour of the Night, *Timocharis* diligently observed the Southern middle of the Moon falling upon the third and middle Star of the Pleiades. *Ptol. lib. 7.*

The Equal Time at *London* was 6^h. 29'. the Place of $\odot$ by our Tables in $\approx$ 6°. 5'. 43". the true place of Δ γ 29°. 38'. with Latitude North 3°. 56'. but her visible place at *Alexandria* γ 28°. 53'. with Lat. North 3°. 50'. the middle Star of the Pleiades in γ 29°. 16'. 40". in Lat. North 4°. 1'. therefore however the Observation was made, the Visible Lat. of Δ was certainly less then the Lat. of the Star; and by our Calculations she was then under, and her upper Limb very near the Star, soon after covering it.

Anno Ante Christum, 229. March the Second, in the beginning of the Night, η appeared 2 digits under the following Star in the left Wing of μ . The time at *London* is 5^h. the sidereal Longitude of $\odot$ Computed 11°. 4°. 33'. 54". The mean Anomaly of η 9°. 1°. 58'. 0". his Geocentrick Place 5°. 7°. 16'. 50". and his Lat. North 2°. 41'. 21". the Place of the Star 5°. 6°. 58'. 30". with Lat. North 2°. 50'. therefore the Distance was 20'. which by reason of the contraction of the Eye, might well seem 2 digits.

In the year of Christ, 138. December the 22d. just 8^h. P. M. η was observed by *Ptol.* at *Alexandria* about half a degree in Consequence from the Moon. The equal Time at *London* was 5^h. 47'. the true Place of $\odot$ in ϖ 0°. 18'. 47". of $\mathfrak{D}$ in $\approx$ 11°. 14'. 20". and her Lat. South 1°. 8'. 20". but by correction of Parallax at *Alexandria*, her Visible place was $\approx$ 10°. 14'. 44". with Lat. South 1°. 26'. 40". The mean Anomaly of η 2°. 14°. 26'. 17". his Geocentrick Long. from the *Æquinox* $\approx$ 11°. 19'. 19". and his Lat. South 1°. 37'. 57". And in regard the Moon was then very near setting in the Horizon, and η 1 degree higher, she was about 8'. more refracted, so that the visible Distance of their Centers in Longitude was not above 56 or 57'. which commonly by estimation of the Eye seems about half a degree.

Bullialdus in his *Astron. Philolaica*, Lib. 6. Pag. 246 and 247. relates an application of $\mathfrak{D}$ to η , observed in the year of Christ, 503. Febr. the 21st at Night, in which, near about the 4th hour, the Moon hid the Star of η , but after η was fully freed from the interposition of $\mathfrak{D}$, the Observer, together with his loving Brother, found the temporal hours by an Astrolabe 5. $\frac{1}{2}$. so as they conjectured a Central $\oslash$ of η and $\mathfrak{D}$ about the 5th hour, for he appear'd to Emerge in the middle of the enlightened part of her Circumference, &c.

Another of $\mathfrak{D}$ to *Palilicium*, Lib. 3. Pag. 172. Anno Christi, 509. March the 11th, after the going down of Twilight, the Moon was seen following the clear Star of the *Hyades*, at most half a Digit: and she seemed to have hid him, for the Star was applied to the part by which the illuminate Limb of the Moon was bisected. Then was the Moon according to true Motion in $\oslash$ 16°. 30'.

These and some other notable Observations, besides those related by *Ptolomy*, *Bullialdus* found in an antient Greek Manuscript in the Kings Library, as you may see in *Ast. Philolaica*, Lib. 7. Pag. 278. but the particular Place where either of these two Applications of $\mathfrak{D}$ were observed, is not signified in the said Manuscript, nor otherwise certainly known: and though *Bull.* supposed them at *Athens*, it is most probable that they were both in some other Meridian at least 2 hours more to the East. But if we compute unto *Athens*; then by our Tables,

Anno Christi 503. Febr. the 21st, the Time of the Observation by the Astrolabe, Equated and reduced unto *London* is 10^h. 9'. The true place of the Sun in κ 4°. 46'. 39". and the Moon in $\oslash$ 7°. 2'. 45". her Lat. North 4'. 49". but according to Parallax, her visible Place at *Athens* in $\oslash$ 6°. 30'. with Lat. South. 0°. 18'.

The mean Anomaly of η 6°. 25°. 17'. 35". his Geocentrick Long. from the *Æquinox*, $\oslash$ 4°. 15'. 39". and his Lat. North, 11'. 56".

Anno Christi, 509. March the 11th, about an hour and half after Sun setting at *Athens*, the Equal Time at *London* is $5^h. 40'$. the true place of the Sun in $\times 22^\circ. 57'. 43''$. and of the Moon in $\oslash 21^\circ. 34'. 28''$. her Lat. South $5^\circ. 0'. 37''$. but her visible Place at *Athens* in $\oslash 20^\circ. 58'$. with Lat. South $5^\circ. 13'$. the place of the Star $\oslash 19^\circ. 38'$. and his Latitude South $5^\circ. 30'$.

Here Note, that in *Ast. Phil.* Pag. 172. in the last six Lines, there is a Mistake in the place of $\oslash$, her Longitude being by the Tables of *Bullialdus* at least 1° . more than is there computed.

Anno Christi, 1514. February the 23d. Day, 16h. reduced unto *London*. *Nicholas Copernicus* observed η in a right Line, with the second and third brighter Stars in the front of μ .

The Latitude of η was then $2^\circ. 14'$. North, and hence his Longitude by observation $6^\circ. 28'. 51'$. *feré*.

The Sidereal Place of $\odot$ by our Tables $10^\circ. 18'. 21'. 5''$. The mean Anomaly of η $10^\circ. 20'. 53'. 29''$. his Geocentrick Longitude $6^\circ. 28'. 43'. 47''$. and his Lat. North $2^\circ. 13'. 53''$.

Anno Christi, 508. September the 26th, 14h. when ψ appeared in $\oslash$ with *Cor Leonis* and 3 Digits more Northerly.

The true Longitude of $\odot$ ($\alpha 1 \times \gamma$) was $5^\circ. 22'. 44'. 58''$. The mean Anomaly of ψ $10^\circ. 3'. 34'. 5''$. his Geocentrick Place $3^\circ. 26'. 43'. 23''$. and his Lat. North $46'. 57''$. but the Place of *Cor Leonis* is $3^\circ. 26'. 40'$. with correct Lat. North $27'. 20''$. therefore the Distance of their Centers was $20'$. which by bare ocular estimation exceeds not 3 Digits.

Anno Christi, 498: May the 1st. Day, near 7h. reduced to *London*, $\oslash$ was seen so conjoined with ψ that there was no interval between them. The true Longitude of $\odot$ was $0^\circ. 29'. 20'. 6''$. The mean Anomaly of ψ $11^\circ. 17'. 42'. 32''$. his Geocentrick Place $4^\circ. 18'. 31'. 34''$. with Lat. North $1^\circ. 25'. 30''$. The mean Anomaly of $\oslash 2^\circ. 3'. 7'. 47''$. his Geocentrick Place $4^\circ. 18'. 32'. 28''$. with Lat. North $1^\circ. 16'. 22''$. The Difference of Longitude is $0'. 54''$. of Lat. $9'. 8''$. at which small Distance to the bare Eye they might well seem to have no interval or space between them.

Anno Christi, 509. June the 13th about $7h.$ in respect of our Meridian, $\oslash$ almost touched ψ , so that he seemed distant from him in antecedence 1 Digit, but to the South 2 Digits.

The true Longitude of $\odot$ was $2^\circ. 10'. 34'. 32''$. the mean Anomaly of ψ $10^\circ. 25'. 8'. 53''$. his Geocentrick Place $3^\circ. 29'. 47'. 35''$. his Lat. North $1^\circ. 2'. 16''$. The mean Anomaly of $\oslash 1^\circ. 1'. 13'. 2''$. his Geocentrick Place $3^\circ. 29'. 38'. 21''$. with Lat. North $1^\circ. 8'. 13''$. here the Difference of Longitude is $9'. 14''$. of Lat. $5'. 57''$. perhaps the position

on of the Zodiack was not rightly Considered; but σ was certainly in antecedence and his Lat. to the North from γ .

• *Anno Christi, 1170. September* the 13th at midnight, two of the Planets were so conjoyned that it appeared as if they had been one and the same Star, but they were presently separated. *Gervasii Chronic.*

These two Planets were γ and σ , being then so near together that they seemed as one Star, but to some Eyes a little distinguished.

The Sidereal Long. of the Sun was by our Tables $5^{\circ} 5'. 26'. 31''$. The mean Anomaly of γ $7^{\circ} 23'. 51'. 50''$. his Geocentrick Place $1^{\circ} 19'. 16'. 3''$. with Lat. South $42'. 44''$. The mean Anomaly of σ $7^{\circ} 27'. 13'. 49''$. his Geocentrick Place $1^{\circ} 19'. 8'. 55''$. and his Lat. South $39'. 1''$. The Difference of Longitude is $7'. 8''$. of Lat. $3'. 43''$. and hence the Distance of their Centers $8'$.

Anno 1461. December the 25th 5^h. 30'. reduced unto London, by the Observation of *Regiomontanus*, σ seemed conjunct in the same Longitude with the following brighter Star in the Tail of ω . The true place of $\odot$ was then $8^{\circ} 17'. 32'. 34''$. The mean Anomaly of σ $6^{\circ} 9'. 39'. 42''$. his Geocentrick Place $9^{\circ} 20'. 17'. 39''$. and his Lat. South $1^{\circ} 7'. 28''$. but the place of the Star is $9^{\circ} 20'. 23'$. with Lat. South $2^{\circ} 30'$.

1462. *September* the 14th. 15^h. in respect of the Mer. of London. *Regiomont* observed σ between the Lions Heart and the Southern of the 3 Stars in his Neck, as in a right Line, and distant to the North from *Cor. Ω* the quantity of the Diameter of $\odot$ *ferè*.

The true place of $\odot$ is $5^{\circ} 4'. 51'. 9''$. The mean Anomaly of σ $10^{\circ} 27'. 41'. 26''$. his Geocentrick place $3^{\circ} 26'. 18'. 39''$. and his Lat. North $1^{\circ} 17'. 11''$. therefore σ was punctually in the said right line, and his distance from *Cor. Ω* $54'$. which to the bare Eye seems no more than one Diam. of $\odot$.

1462. *October* the 15th. 16^h. reduced σ was in antecedence from the hinder knee of Ω , and more Southerly; the Distance being by estimation of *Regiomont* equal to 4 Diameters of $\odot$. The true Long of $\odot$ was $6^{\circ} 5'. 40'. 38''$. The mean Anomaly of σ $11^{\circ} 13'. 57'. 27''$. his Geocentrick Place $4^{\circ} 15'. 14'. 7''$. and his Lat. North $1^{\circ} 28'. 18''$. but the place of the Star is $4^{\circ} 15'. 31'. 30''$. with Lat. North $1^{\circ} 40'$.

The next following Morning, he beheld σ in consequence from the Star, and Distant half as much more as the foregoing Morn. the Diurnal motion of σ at that time was $36'$.

1479. *November* the 7th. 15^h. reduced. *Bernard Walther* observed σ according to Longitude in δ with the following Star in the left wing of π , but more than a degree to the South. The true place of $\odot$ was $6^{\circ} 28'. 27'. 9''$. the mean Anomaly of σ $0^{\circ} 9'. 43'. 11''$. his Geocentrick Place $5^{\circ} 6'. 59'. 13''$. and his Lat. North $1^{\circ} 23'. 46''$. but the place of the Star is $5^{\circ} 6'. 58'. 30''$. with North $2^{\circ} 50'$.

In the year before Christ, 272. *Octob.* the 11th 15^h. reduced unto *London*. *Timocharis* observed ♀ applying near to the former Star of the 4 in the left Wing of π . *Ptol. Lib. 10. Cap. 4.*

The true Longitude of $\odot$ (α 1 $\times$ γ) was 6°. 12'. 8". 26". The mean Anomaly of ♀ 5°. 21'. 29'. 5". her Geocentrick Place 5°. 1'. 8". 43". with Lat. North 1°. 31'. 25". but the place of the Star is 5°. 1'. 39". with Lat. North 1°. 25'.

Anno Christi, 132. March the 8th. 5^h. reduced. ♀ was distant in antecedence about the whole length of the *Pleiades* from the middle or brightest of them. *Ptol. Lib. 10. Cap. 1.*

The true place of $\odot$ was 11°. 9'. 22'. 33". the mean Anomaly of ♀ 7°. 0'. 10'. 20". her Geocentrick Place 0°. 24'. 3'. 37". and her Lat. North 4°. 13'. 59". the brightest of the *Pleiades* 0°. 26°. 47'. with Lat. North 4°. 1'.

Anno Christi, 138. Decemb. 15th day, 14^h. 31'. was the equal Time at *London*, when *Ptol.* at *Alexandria* observed ♀ between and in a right line with the Northern brightest Star in the front of π and the visible Center of the Moon. *Lib. 10. Cap. 4.*

The true Long. of $\odot$ from the *Æquinox* was then by our Tables in ♀ 23°. 32'. 41". The Moon in π 5°. 56'. 53". her Lat. North 5°. 8'. 40". but according to Parallax, her visible place at *Alexandria* was in π 6°. 46'. 40". with Lat. North 4°. 52'. 42". The mean Anomaly of ♀ 7°. 02°. 52'. 22". her Geocentrick Place in π 7°. 23'. 18". with Lat. North 3°. 3'. 17". and the Place of the Star in π 8°. 5'. 22". with correct Lat. North 1°. 4'. therefore the visible Center of $\odot$, ♀ and the Star were truly in a right Line. But that ♀ should be in antecedence from $\odot$ and their visible Distance sesquialter to that of ♀ and the Star, (as *Ptol.* there addeth) was plainly impossible.

Anno Christi, 140. July the 29th 14^h. reduced. ♀ was observed half a Moon on the East from the left Knee of the following Twin. *Ptol.* The true Long. of $\odot$ was 3°. 27°. 8'. 59". the mean Anomaly of ♀ 2°. 21°. 17'. 56". her Geocentrick place 2°. 12°. 53'. 2". with Lat. South 2°. 7'. 39". but the place of the Star is 2°. 11°. 49'. with Lat. South 2°. 5'.

In the 226 year of *Diocletian* (*Mefori* 26) ♀ was seen in antecedence from γ at most 20 Digits, and the 28th in Consequence 10 Digits: but in Lat. there appeared no difference. See *Astron. Philolaica, Lib. 9. Pag. 346. & seq.*

This was *Anno Christi, 510.* The first Observation *August* the 19th presently after Sun-set, and the Time by estimation at *London* 5^h. 40'. The true place of $\odot$ by our Tables 4°. 14°. 32'. 42". the mean Anomaly of

of γ $0^{\circ} 1^{\circ} 2' 22''$. his Geocentrick Place $5^{\circ} 6^{\circ} 46' 18''$. and his Lat. North $1^{\circ} 8' 23''$. the mean Anomaly of φ $8^{\circ} 29^{\circ} 20' 19''$. her Geocentrick Place $5^{\circ} 5^{\circ} 25' 45''$. and Lat. North $1^{\circ} 0' 35''$. the Difference of the Long. of γ and φ $1^{\circ} 20' 33''$. of Lat. $7' 48''$.

The second Obs. *August* the 21st. $5^h 40'$. the true place of $\odot$ $4^{\circ} 16^{\circ} 29' 9''$. The mean Anomaly of γ $0^{\circ} 1^{\circ} 12' 20''$. his Geocentrick place $5^{\circ} 7^{\circ} 11' 18''$. and his Lat. North $1^{\circ} 8' 16''$. the mean Anomaly of φ $9^{\circ} 20' 32' 34''$. her Geocentrick Place $5^{\circ} 7^{\circ} 53' 27''$. and Lat. North $56' 47''$. the Difference of Longitude $42' 9''$. of Lat. $11' 29''$.

In both which Observations, the contraction of the Eye being duly considered, the Observed and Computed Distances do excellently agree, the Difference of Lat. in those intervals not easily appearing.

And though the Month, with the Day of the first Observation be omitted in the Original Greek Copy, it could be no other than *Mesori* 26. not 27. as *Bull.* imagineth.

In the 21st. year of *Dionysius*, the 22^d. day of *Scorpio*, in the Morning φ was seen distant one Moon backward (or in antecedence) from a right Line passing through the Northern and middle Stars of the front of π , but to the North from the Northern, two Moons. And 4 days after, on the 26th of *Scorpio*, he was distant from the same Line in Consequence one whole Moon and a half, *Ptol. Lib. 9. Cap. 10.*

This was in the year before Christ 265. and in all probability on the 17th and 21st Days of *November*; not as *Ptol.* seems to account by middle Motions, &c. as you may see in *Cunitia, De usu Tabularum*, Pag. 105. Observe our following Calculation.

Anno ante Christum, 265. *November* the 16th Day, $15^h 30'$. reduced unto *London*. The true Longitude of $\odot$ ($\alpha 1 * \gamma$) was $7^{\circ} 18^{\circ} 49' 53''$. from the *Æquinox* in π $21^{\circ} 34' 35''$. The mean Anomaly of φ $7^{\circ} 12^{\circ} 37' 17''$. his Geocentrick fidereal Place $6^{\circ} 29^{\circ} 27' 32''$. with Lat. North $2^{\circ} 44' 19''$.

Novemb. the 20th. $15^h 30'$. The true Long. of $\odot$ $7^{\circ} 22^{\circ} 54' 26''$. from the *Æquinox* in π $25^{\circ} 39' 9''$. The mean Anomaly of φ $7^{\circ} 28^{\circ} 59' 27''$. and his Geocentrick Place $7^{\circ} 1^{\circ} 37' 4''$.

Therefore in the first Observation, φ was in antecedence from the said right Line $52'$. with Latitude more Northerly than the *Borea frontis Scorpis* $1^{\circ} 40'$. And in the second Observation he was half as much more from the same Line in Consequence as in the first in antecedence; agreeing in all respects with the appearance.

Anno Christi, 1481. *October* the 21st. $17^h 30'$. reduced to our Meridian. *Bernard Walther* saw φ distant in Longitude to the East from π ,

as he judged by the Eye, not above the Diameter of the Moon, and both in the same Latitude.

The true Longitude of $\odot$ was then $6^{\circ}. 11'. 53''. 56''$. The mean Anomaly of γ $9^{\circ}. 15'. 38''. 12''$. his Geocentrick place $5^{\circ}. 22'. 17''. 55''$. his Lat. North $20^{\circ}. 16'. 49''$. The mean Anomaly of δ $7^{\circ}. 0'. 39''. 48''$. his Geocentrick place $5^{\circ}. 23'. 2'. 47''$. and his Lat. North $2^{\circ}. 12'. 8''$. therefore their distance was $45'$. &c. agreeing best with observation.

Anno 1488. January the 17th 4h. 50'. reduced by the Instrumental: Observation of Bernard Walther, the Distance between γ and δ was $1^{\circ}. 44'\frac{1}{2}$. The true Long. of $\odot$ was then $9^{\circ}. 10'. 15''. 52''$. The mean Anomaly of γ $4^{\circ}. 25'. 6''. 20''$. his Geocentrick Place $9^{\circ}. 28'. 8''. 35''$. and his Lat. South $54'. 20''$. The mean Anomaly of δ $5^{\circ}. 24'. 55''. 59''$. his Geocentrick Place $9^{\circ}. 28'. 17''. 52''$. and Lat. North $49'. 4''$. therefore the Distance of their Centers $1^{\circ}. 44'$.

Again, January the 19th 4h. 5' reduced; he observed the Distance between γ and δ $2^{\circ}. 23'$. fere, δ more Easterly and Northerly than γ . The true Long. of $\odot$ was $9^{\circ}. 12'. 17''. 41''$. The mean Anomaly of γ $4^{\circ}. 25'. 16''. 19''$. his Geocentrick Place $9^{\circ}. 28'. 36''. 56''$. and his Lat. South $54'. 21''$. The mean Anomaly of δ $6^{\circ}. 3'. 7''. 4''$. his Geocentrick Place $9^{\circ}. 29'. 25''. 2''$. with Lat. North $10. 22'. 2''$. and hence their true Distance $2^{\circ}. 24'\frac{1}{2}$.

1504. March the 17th 6h. 19'. reduced, &c. Bernard Walther at Norimberg, observed the Sidereal Longitude of δ compared with Aldebaran $11^{\circ}. 29'. 20'\frac{1}{2}$. whence his true place correct by refraction was $11^{\circ}. 29'. 14'$. The true Long. of $\odot$ was then by our Tables $11^{\circ}. 10'. 18''. 57''$. The mean Anomaly of δ $7^{\circ}. 6'. 19''. 33''$. and his Geocentrick Place $11^{\circ}. 29'. 15''. 35''$. δ being in or near his greatest Elongation from $\odot$.

The next following Day, March the 18th 6h. 24'. reduced, &c. by the Observation of Walther, correct as before: The true Place of δ was $0^{\circ}. 0'. 14'$.

The true Longitude of $\odot$ by our Calculation $11^{\circ}. 11'. 18''. 13''$. The mean Anomaly of δ $7^{\circ}. 10'. 25''. 57''$. and his Geocentrick Place $0^{\circ}. 0'. 14'. 22''$.

The Equal Times at *London* with the Planets Places computed by our Tables to the Observations of *Tycho*, *Longomontanus*, *Bullialdus*, *Gassendus* and others.

$\hbar$ In φ to $\odot$ Observed by *Tycho* and *Longomont.*

Anno.	Mens.	D. H. /	Loc. $\odot$ verus s o ' "	Anom $\hbar$ med s o ' "	Loc. $\hbar$ Comput. s o ' "	Loc. $\hbar$ Obser. s o ' "	Differ. ' "
1582	Aug. 21.	1. 24	4. 10. 9. 46	2. 17. 53. 39	10. 10. 1. 45	10. 10. 5. 36	+3. 51
1583	Sep. 3.	0. 21	4. 22. 31. 29	3. 0. 32. 52	10. 22. 26. 22	10. 22. 28. 44	+2. 22
1584	Sep. 15.	5. 47	5. 5. 14. 30	3. 13. 11. 43	11. 5. 10. 31	11. 5. 11. 51	+1. 20
1585	Sep. 28.	18. 43	5. 18. 22. 0	3. 25. 51. 41	11. 18. 14. 55	11. 18. 13. 28	-1. 27
1586	Oct. 12.	10. 9	6. 1. 41. 53	4. 8. 31. 49	0. 1. 39. 30	0. 1. 38. 5	-1. 25
1587	Oct. 26.	8. 6	6. 15. 24. 7	4. 21. 12. 32	0. 15. 22. 0	0. 15. 21. 12	-0. 48
1588	Nov. 8.	9. 16	6. 29. 19. 51	5. 3. 53. 29	0. 29. 19. 39	0. 29. 18. 19	-1. 20
1589	Nov. 22.	13. 37	7. 13. 28. 2	5. 16. 34. 43	1. 13. 27. 59	1. 13. 26. 26	-1. 33
1590	Dec. 6.	19. 40	7. 27. 43. 35	5. 29. 16. 6	1. 27. 41. 43	1. 27. 42. 33	+0. 50
1591	Dec. 21.	0. 13	8. 11. 56. 37	6. 11. 57. 22	2. 11. 55. 40	2. 11. 56. 10	+0. 30
1595	Jan. 30.	20. 14	9. 23. 41. 43	7. 19. 59. 37	3. 23. 44. 51	3. 23. 44. 32	-0. 19
1608	Jul. 9.	2. 21	2. 29. 12. 25	1. 4. 13. 18	8. 29. 13. 49	8. 29. 10. 37	-3. 12
1609	Jul. 21.	12. 24	3. 10. 49. 56	1. 16. 50. 59	9. 10. 45. 30	9. 10. 47. 43	+2. 13
1610	Aug. 2. 21.	55	3. 22. 28. 52	1. 29. 28. 38	9. 22. 29. 51	9. 22. 25. 51	-4. 0
1611	Aug. 15.	15. 25	4. 4. 30. 34	2. 12. 6. 57	10. 4. 28. 16	10. 4. 26. 58	-1. 18

$\hbar$ By Application to fixt Stars, from *Bullialdus*.

Anno	Mens.	D. H. /	Loc. $\odot$ verus s o ' "	Anom $\hbar$ med s o ' "	Loc. $\hbar$ Comput. s o ' "	Loc. $\hbar$ Obser. s o ' "	Differ. ' "
1639	Sep. 6.	8. 0	4. 25. 26. 45	1. 25. 1. 55	9. 14. 31. 20	9. 14. 27. 7	-4. 13
1639	Nov. 4.	7. 0	6. 24. 7. 30	1. 27. 0. 17	9. 14. 30. 44	9. 14. 27. 58	-2. 46
1640	Oct. 2.	8. 0	5. 21. 49. 17	2. 8. 8. 53	9. 25. 50. 15	9. 25. 45. 52	-4. 23
1641	Aug. 19.	10. 0	4. 8. 28. 34	2. 18. 53. 29	10. 11. 18. 19	10. 11. 23. 8	+4. 49

ψ In φ to $\odot$ Observed by *Tycho* and *Longomont.*

Anno	Mens.	D. H. /	Loc. $\odot$ verus s o ' "	Anom ψ med s o ' "	Loc. ψ Comput. s o ' "	Loc. ψ Obser. s o ' "	Differ. ' "
1583	Sept. 6.	19. 30	4. 26. 14. 18	5. 17. 39. 54	10. 26. 14. 38	10. 26. 11. 43	-2. 55
1584	Oct. 13.	6. 29	6. 3. 3. 27	6. 21. 6. 23	0. 3. 2. 56	0. 2. 59. 47	-3. 9
1591	Apr. 23.	17. 54	0. 15. 37. 13	1. 9. 9. 20	6. 15. 40. 44	6. 15. 42. 14	+1. 30
1595	Sept. 12.	5. 28	5. 1. 28. 41	5. 22. 18. 36	11. 1. 19. 30	11. 1. 24. 30	+5. 0
1596	Oct. 18.	11. 8	6. 8. 11. 23	6. 25. 43. 59	0. 8. 5. 6	0. 8. 7. 34	+2. 28
1607	Sep. 17.	10. 27	5. 6. 31. 48	5. 26. 56. 16	11. 6. 26. 20	11. 6. 28. 18	+1. 58
1610	Dec. 30.	13. 55	8. 21. 50. 51	9. 6. 39. 40	2. 21. 56. 58	2. 21. 51. 30	-5. 28
1613	Mar. 1.	11. 5	10. 23. 47. 28	11. 12. 27. 38	4. 23. 52. 44	4. 23. 58. 39	+5. 55

Long.

Longomont. hath the Time of this last δ at *Uraniburg* 22^h. which probably was a Mistake, and should be rather 12^h. or otherwise by his own Calculation, &c. the Sun was too far from the δ of ψ .

One *Haffuck* Observation a Day after the δ .

Anno Menf.	P. H. '	Loc. $\odot$ verus.	Anom. ψ med.	Loc. ψ Comp.	Loc. ψ Obser.	Differ.
1594. Aug. 6.	8.38	3. 25.53.21	4 18.55. 5	9. 24.42.30	9. 24.43 56	+ 1. 26

Applications of ψ to fixt Stars.

1623. *October* the 12th. 17^h. *Bullialdus* observed ψ in more Longitude than *Cor. Ω* 3'. and Latitude to the North 8'.

The true place of $\odot$ was then 5°. 21°. 32'. 52". The Mean Anomaly of ψ 10°. 3°. 48'. 0". his Geocentrick place, 3°. 26°. 48'. 22". and his Latitude North 47'. 0". Therefore the difference of Longitude was 8'. $\frac{1}{2}$. and of Latitude 20' feré, agreeing well with the observation made only by estimation of the bare Eye. And this compared with the δ of ψ and *Cor Ω* observed A.C. 508. *Sept.* 27. *mané*, shews the immobility of the Nodes.

1633. *Decemb.* the 8th. 16^h. *Gassendus* observed ψ distant 4 $\frac{1}{2}$. of his own Diameters from *Propus*, ψ more Southerly and near δ with the Star.

The true Long. of $\odot$ was 7°. 29°. 36'. 25". The mean Anomaly of ψ 8°. 12°. 54'. 5". his Geocentrick place, 1°. 27°. 44'. 31". and Lat. South 17'. 3". but the place of the Star is 1°. 27°. 45. with correct Lat South, 11 $\frac{1}{2}$.

1634. *April* 2d. 8^h. by the Telescope-observation of *Bullialdus*, ψ was at least 3'. in consequence from *Propus*, at which time the true place of $\odot$ was 11°. 24°. 49'. 51". the mean Anom. of ψ 8°. 22°. 25'. 46". and his Geocentrick place 1°. 27°. 49'. 22".

1634. *November* the 24th. 10^h. *Bull.* observed ψ exactly in the same Longitude with the South *Afellus*. The true place of $\odot$ was 7°. 14°. 49'. 29". the Mean Anom. of ψ 9°. 12°. 2'. 47". and his Geocentrick Longitude 3°. 5°. 31'. 4". as observed.

1637. *March* the 14th. 11^h. 30'. *Bull.* observed ψ conjunct according to Longitude with the former Star of the 4 in the Left wing of π .

The true place of $\odot$ was 11°. 6°. 32'. 59". the Mean Anom of ψ 11°. 21°. 55'. 56". and his Geocentrick place 5°. 1°. 35'. 8". but the place of the Star is, according to *Tycho*, 5°. 1°. 39'.

1639. *August* 21st. 8^h. *Bull.* observed ψ about 2'. in Consequence from the Northern brightest of the front of π .

The true place of the Sun computed $4^{\circ} 9' 51''. 39''$. the Mean Anom. of ψ $2^{\circ} 5' 52''. 21''$. and his Geocentrick place $7^{\circ} 0' 1' 30''$. but the place of the Star is $6^{\circ} 29' 59''$.

1649. *May* the first day, 10h. ψ was observed just $1'$ in antecedence from the former of the four in the left or Southern wing of π .

The true place of $\odot$ was then $0^{\circ} 23' 9''. 54''$. the Mean Anomaly of ψ $0^{\circ} 0' 6''. 38''$. and his Geocentrick place, $5^{\circ} 1' 34''. 9''$.

The following 31th, or last of *May*, at Noon, The Longitude of ψ was by Observation made the night before and after, exactly the same with the Star.

The true place of $\odot$ was $1^{\circ} 21' 29''. 5''$. the Mean Anom. of ψ $0^{\circ} 2' 34''. 7''$. and his Geocentrick place, $5^{\circ} 1' 35''. 18''$.

And the Motion of ψ in these two last Observations, with that of 1637, *March* the 14th, so precisely agreeing, shews the difference, though it be but small, rather in the place of the Star than ψ .

$\odot$ In δ to $\odot$. by Tycho, Kepler, Fabricius and Longomont.

Anno Mens. D. H. /	Loc. $\odot$ verus. s. o. ' "	Anom. $\odot$ med. s. o. ' "	Loc. $\odot$ Comp. s. o. ' "	Loc. $\odot$ Obser. s. o. ' "	Differ. ' "
1585 Nov. 18. 0. 37	7. 9. 9.30	8.27.20. 0	1. 9. 6. 53	1. 9. 8. 41	+ 1. 48
1585 Dec. 28. 3. 12	8.19.31.17	10.10.53.48	2.19.31. 32	2.19.33. 48	+ 2. 16
1585 Jan. 30.18. 28	9.24.11. 8	11.24.35.33	3.24.11. 10	3.24.12. 42	+ 1. 32
1587 Mar. 6. 6. 27	10.28.13.20	1. 2.12.59	4.28.23. 10	4.28.17. 45	- 5. 25
1589 Apr. 14. 5. 17	0. 6.53.56	2.15.41.51	6. 7. 0. 49	6. 6.55. 58	- 4. 51
1591 Jun. 8. 6. 51	1.29.13.53	4. 7. 5.57	7.29.10. 18	7.29.14. 8	+ 3. 50
1593 Aug. 25.16. 50	4.14.51. 8	6.11.15.40	10.14.41. 9	10.14.45. 15	+ 4. 6
1595 Oct. 30.23. 45	6.20. 4. 1	8. 8.32.38	0.19.55. 27	0.19.59. 3	+ 3. 36
1597 Dec. 13.15. 5	8. 4.53.11	9.24.28.53	2. 4.48. 15	2. 4.53. 35	+ 5. 20
1600 Jan. 18.13. 18	9.10.58. 1	11. 5.51.11	3.10.58. 23	3.11. 1. 48	+ 3. 25
1602 Feb. 20.13. 21	10.14.43.33	0.16.13. 0	4.14.49. 22	4.14.49. 2	- 0. 20
1604 Mar. 28.15. 19	11.20.54.11	1.28.11.39	5.20.58. 22	5.20.57. 25	- 0. 57
1603 Jul. 24. 1. 25	3.13.30.46	5.15.20.30	9.13.32. 19	9.13.27. 34	- 4. 45
1610 Oct. 8.16. 0	5.27.48.22	7.18. 1.54	11.27.41. 2	11.27.45. 42	+ 4. 40

♂ Extra situm Acronyebium. Tycho.

Anno. Mens. D. H.	Loc. ☉ verus ° ' "	Anom. ♂ med. ° ' "	Loc. ♂ Comput. ° ' "	Loc. ♂ Obser. ° ' "	Differ. ' "
1582 Nov. 23. 15. 7	7.24.20.12	9.22.48.56	2.29.17.45	2.29.16.53	— 0. 52
Dec. 26. 7.44	8.17.40.26	10. 9.56.51	2.20.15.18	2.20.18.49	+ 3. 31
Dec. 30. 7.25	8.21.44.23	10.12. 2.12	2.18.39.24	2.18.38.48	— 0. 36
1583 Jan. 26. 5.30	9.19. 6. 5	10.26. 8.37	2.10.57. 4	2.10.58.45	+ 1. 41
1584 Dec. 21.13.13	8.13.18.14	11. 0.30.59	4. 3.51.36	4. 3.50. 7	— 1. 29
1585 Jan. 24. 8.15	9.17.41.14	11.18.13.31	3.26.43. 1	3.26.44. 3	+ 1. 2
Feb. 4. 5.53	9.28.42. 6	11.23.56.45	3.22.24.31	3.22.23.31	— 1. 0
Mar. 12. 9.31	11. 4.47.45	0.12.52.56	3.14.21.14	3.14.22.26	+ 1. 12
1587 Jan. 25.16.15	9.18.31. 7	0.11.28. 9	5. 7.19.46	5. 7.16.50	— 2. 56
Mar. 4.12.28	10.26.29. 9	1. 1.17.59	4.29. 4. 1	4.29. 0.25	— 3. 36
Mar. 10.10.32	11. 2.21.15	1. 4.24. 6	4.26.45.30	4.26.40. 0	— 5. 30
Apr. 21. 8.24	0.13.19.44	1.26.21.52	4.18.25.12	4.18.22.59	— 2. 13
1589 Mar. 8.15.27	11. 1. 3.38	1.26.31.49	6.14.53.11	6.14.49.53	— 3. 18
Apr. 13.10. 9	0. 6. 7.32	2.15.16.48	6. 7.18.21	6. 7.16.18	— 2. 3
Apr. 15.10.59	0. 8. 5.53	2.16.20.46	6. 6.33.26	6. 6.31.17	— 2. 9
Maij 6.10.15	0.28.19.15	2.27.20. 6	5.29.41.58	5.29.40.14	— 1. 44
1591 Maij 13.12.57	1. 4.39. 1	3.23.36.27	8. 4.46.13	8. 4.51.11	+ 4. 58
Jun. 6.11.27	1.27.30.30	4. 6. 9. 5	7.29.43.24	7.29.46. 8	+ 2. 44
Jun. 10.10.59	2. 1.18. 0	4. 8.14.14	7.28.30.18	7.28.33.44	+ 3. 26
Jun. 28. 9.41	2.18.23.27	4.17.38.30	7.23.40.29	7.23.41. 5	+ 0. 36
1593 Jul. 21.13.24	3.10.57.46	5.22.50.41	10.20.11. 3	10.20.15. 4	+ 4. 1
Aug. 22.11.44	4.11.43.50	6. 9.34.40	10.15.34.38	10.15.39.30	+ 4. 52
Aug. 29. 9.42	4.18.27.25	6.13.12. 4	10.13.40.20	10.13.43.14	+ 2. 54
Oct. 3. 7.11	5.22.48.33	7. 1.29.15	10.10.15.41	10.10.19.20	+ 3. 39
1595 Sept.17.16. 1	5. 6.49.41	7.15.50.30	0.28.31.35	0.28.34.42	+ 3. 7
Oct. 27.11.26	6.16.30. 4	8. 6.42.10	0.21.15.41	0.21.18.38	+ 2. 57
Nov. 3.11. 6	6.23.32.59	8.10.21.51	0.18.43.32	0.18.45.53	+ 2. 21
Dec. 18. 7.12	8. 9. 9.20	9. 3.51.36	0.14. 7.21	0.14. 7.17	— 0. 4

1591. *January* the 9th in the Morning, *Michael Mæstlin* observed ♀ eclipsed by ♂. *January* 8th. 17h. The true place of ☉ was 9°. 1°. 16'. 11". The mean Anomaly of ♀ 15°. 0°. 25'. 40". his Geocentrick place, 6°. 17°. 38'. 39". with Lat. North, 1°. 7'. 8". The mean Anomaly of ♂ 1°. 18°. 11'. 29". his Geocentrick place, 6°. 17°. 37'. 37". and his Lat. North, 1°. 8'. 38". The difference of the the Long. is 1'. 2". of Lat. 1'. 30". and hence the distance of their Centers, 1'. 49". so that the fiery red Light of ♂ eclipsed ♀, as was observed.

1644. *July* 27th 14h. Mr. *Wing* at *N. Luffenham*; and myself at that time in *South-Wales*, with due consideration had to the contraction of the Eye, &c. observed ♂ in antecedence from ♀ about 5' and more southerly 10'. The true place of ☉ was 3°. 16°. 41'. 19". The mean Anomaly of ♀ 7°. 5°. 37'. 34". his Geocent. place 1°. 0°. 12'. 34". with Lat. South, 58'. 53". The mean Anom. of ♂ 7°. 7°. 43'. 13". his Geocent. place 1°. 0°. 7'. 31". and Latitude South, 1°. 9'. 9". Therefore the difference

difference of Long. was $5'. 3''$. and of Lat. $10'. 16''$. according to Observation.

1644. *Sept.* 16th 12^h. *Bullialdus* by an Optick tube, observed σ in consequence from *Propus*, and distant 4 or 5'. in the same *Almicantbar*.

The true place of $\odot$ was $5'. 6''. 7'. 56''$. The mean Anom. of σ $8'. 4''. 24'. 9''$. his Geocent. place, $1'. 27''. 49'. 44''$. and Lat. South $10'. 42''$. but the place of the Star is $1'. 27''. 45'$. with correct Lat. South $11'\frac{1}{2}$.

1644. *Nov.* the 10th 18^h. Mr. *Wing* with a Perspective observed σ to the West and South from the Northern knee of Π . the difference of Long. being about 2, and of Lat. 4 Diameters of σ .

The true place of $\odot$ was $7'. 1''. 23'. 27''$. The mean Anom. of σ $9'. 3''. 21'. 20''$. his Geocent. place $2'. 6''. 39'. 17''$. and Lat. North, $1''. 59'. 37''$. but the place of the Star is $2'. 6''. 45'$. with correct Lat. North $2''. 02'\frac{1}{2}$.

Nov. 26th. day, 19^h. he observed σ almost full North from the heel of the higher Foot of Π distant by Instrument $3''. 35'$. and in antecedence from the Star about 3 times his Diameter.

The true place of $\odot$ was $7'. 17''. 41'. 27''$. The Mean Anomaly of σ $9'. 11''. 45'. 42''$. his Geocent. place $2'. 2''. 0'. 44''$. and Lat. North $2''. 44'. 58''$. but the place of the Star is $2'. 2''. 7'$. with correct Lat. South $51'\frac{1}{2}$.

1655. *Octob.* the 18th day, 9^h. I observed σ with a Perspective in or near the same Long. with the first of the two bright Stars in the Tail of ν ; but in less South Lat. about 6'.

The true place of $\odot$ was $6'. 6''. 59'. 58''$. The mean Anom. of σ $6'. 26''. 9'. 11''$. his Geocent. place $9'. 18''. 38'. 45''$. and his Lat. South, $2''. 20'. 55''$. but the place of the Star is according to *Tycho*, $9'. 18''. 37'$. with South Lat. correct $2''. 27'$.

1658. *April* the 25th 9^h. myself, together with an ingenious Friend, saw σ in less North Lat. and a little in antecedence from the Northern knee of Π . and as near as we could gather, the Difference of Long. was to the Difference of Lat. as 1 to 8.

The true place of $\odot$ was $0'. 17''. 3'. 9''$. The mean Anom. of σ $10'. 28''. 15'. 54''$. his Geocentrick place $2'. 6''. 39'. 11''$. his Lat. North $1''. 24'. 33''$. and the place of the Star is $2'. 6''. 45'$. with Lat. North $2''. 02'\frac{1}{2}$.

Observations of φ .

1574. *Sept.* 15th. 15^h. 30'. *Michael Mæstlin* saw φ cover the Lyons heart. The true place of $\odot$ was $5'. 5''. 12'. 23''$. the mean Anomaly of φ .

U 2

$4'. 22''$.

4°. 22'. 20". 3". her Geocentrick place 3°. 26°. 44'. 34". and her Lat. North 25°. 42". but the place of *Cor. ♄* is 3°. 26°. 40'. with Lat. North 27°. $\frac{1}{4}$. and therefore the Light of ♀ covered him from the sight of the Observer.

1587. *Janu. 15th* 3h. 55'. *Tycho* Observed the sidereal Longitude of ♀ 10°. 19°. 30'.

The true place of ☉ was 9°. 7°. 51'. 20". the Mean Anom. of ♀ 5°. 9°. 9'. 11". and her Geocentrick place 10°. 19°. 30'. 25".

1590. *Octob. 2d.* 16h. 24'. *Michael Mæstlin* Observed ♂ Eclipsed by ♀.

The true Longitude of ☉ was 5°. 21°. 57'. 54". The Mean Anomaly of ♂ 11°. 26°. 49'. 22". his Geocent. place 4°. 18°. 3'. 27". and Lat. North 1°. 16'. 47". The mean Anom. of ♀ 5°. 22°. 28'. 25". her Geocent. place 4°. 18°. 2'. 46". with Lat. North 1°. 16'. 39". The Difference of Long. is 41". and of Lat. 8". Therefore ♀ wholly Eclipsed ♂, as by Observation.

1598. *Sept. 14th* 13h. 40'. *John Kepler* Observed that ♀ covered *Cor. ♄*: but soon after the Star appeared, &c.

The true place of ☉ was 5°. 4°. 0'. 29". The mean Anom. of ♀ 4°. 24°. 52'. 28". her Geocent. place 3°. 26°. 46'. 16'. and Lat. North 30°. 14".

1601. *April 29th* 7h. 24'. by the Observation of *Tycho*, the Sidereal place of ♀ was 2°. 6°. 43' $\frac{1}{2}$.

The true Long. of ☉ was 0°. 21°. 24'. 31". The mean Anom. of ♀ 7°. 29°. 17'. 45". and her Geocentrick place computed 2°. 6°. 43'. 27".

1633. *May 16th* 8h. 38'. *Bullialdus* with an Optick Tube, observed ♀ Distant from the Star in the left shoulder of the following Twin 18'. or at most 19'. ♀ a little more Westerly and Southerly than the Star.

The true place of ☉ was 1°. 7°. 35'. 32". the Mean Anom. of ♀ 9°. 2°. 18'. 5". her Geocentrick place 2°. 20°. 17'. 33". and her Lat. North 2°. 49'. 54". But the place of the Star is 2°. 20°. 29'. with correct Lat. North 3°. 4' $\frac{1}{2}$. the Difference of Long. 11'. 27". of Lat. 14'. 36". and the Distance as observed.

To these I shall add 7 Distances of ♀ from the Sun, the first 6 being accurately observed by *Tycho*, and the 7th by *Gassendus*; corrected by Refraction and Parallax where need requires.

1582. *Febr. 26th* 2h. 41'. The true place of the Sun was by our Calculation 10°. 20°. 23'. 21". The Mean Anom of ♀ 6°. 0°. 52'. 20". her Geocentrick place 0°. 6°. 33'. 32". with Lat. North 2°. 42'. 6". and hence the true Distance of their Centers 46°. 13'. 51". Observed 46°. 13'.

1582. *March 20th* 1h. 24'. The true place of ☉ was 11°. 12°. 7'. 17". the Mean Anom. of ♀ 7°. 6°. 1'. 59". her Geocentrick place 0°. 25°. 47'. 14".

47'. 14". with Lat. North 4°. 27'. 56". therefore the Distance of their Centers 43°. 50'. 52". Observed 43°. 50'.

1582. April 3d. 0h. 35'. The true place of ☉ was 11°. 25°. 48'. 18". the Mean Anom. of ♀ 7°. 28°. 24'. 31". her Geocentrick place 1°. 4° 6'. 50". with Lat. North 5°. 23'. 38". the Distance of their Centers 38°. 37'. 44". Observed 38°. 38' $\frac{1}{4}$.

1587. January 23d. 23h. 30'. The true place of ☉ 9°. 16°. 47'. 57". the Mean Anom. of ♀ 5°. 23°. 16'. 38". her Geocentrick place 10°. 23°. 39'. 4". with Lat. North 4°. 19'. 48". Distance of their Centers 37°. 4'. 10". Observed 37°. 6'.

1588. October 25th 22h. 54'. The true place of ☉ 6°. 15°. 45'. 55". the mean Anom. of ♀ 4°. 0°. 12'. 8". her Geocentrick place 5°. 8°. 42'. 58". with Lat. South 1°. 11'. 28". Distance of their Centers 37°. 3'. 56". Observed 37°. 2' $\frac{1}{4}$.

1600. February 1th. 19h. 38'. The true place of ☉ 10°. 5°. 28'. 43". the mean Anom. of ♀ 8°. 10°. 22'. 10". her Geocentrick place 8°. 18°. 51'. 8". with Lat. North 3°. 15'. 3". Distance of their Centers computed 46°. 42'. 48". Observed 46°. 43'. *feré*.

1633. December 23d. 21h. 8'. The true place of ☉ 8°. 15°. 7'. 53". the mean Anom. of ♀ 8°. 27°. 12'. 22". her Geocentrick place 7°. 15°. 26'. 12". and her Lat. North 1°. 11'. 24". Distance of their Centers 29°. 42'. 59". Observed 29°. 42' $\frac{1}{4}$.

Observations of ♀.

1601. April 19th. 7h. 24'. Tycho at Prague observed ♀ in Altitude about 7°. Distant from Capella 25°. 40'. and from Procyon 53°. 14'. whence his true place correct by Refraction, &c. was 1°. 2°. 8'. with Lat. North 2°. 37'. The Sidereal Long. of ☉ by our Tables was 0°. 11°. 45'. 30". the mean Anomaly of ♀ 8°. 18°. 51'. 35". his Geocentrick place 1°. 2°. 8'. 0". and Lat. North 2°. 34'. 23".

1607. April 14th 7h. 24'. Longomont. at Hafnia, half an hour past 8, observed the Distance of ♀ and ☉ 2°. 24'. and the difference of Longitude and Latitude almost equal.

The true place of ☉ was 0°. 6°. 23'. 47". the Geocentrick Long. of ♀ 0°. 20°. 16'. 5". and her Lat. South 8'. 21". The mean Anom. of ♀ 6°. 24°. 42'. 7". his Geocentrick place 0°. 22°. 2'. 2". with Lat. North 1°. 45'. 40". The Difference of Long. is 1°. 46'. of Lat. 1°. 54'. and hence their true Distance 2°. 35' $\frac{1}{2}$. from which (supposing the Altitude of ♀ 1°.) the Refraction subtracts 9 or 10'. leaving the visible Distance of their Centers 2°. 26'.

1632. July 20th 15h. 12'. By the Telescope-Observation of *Gassendus* at *Paris*, φ and ψ were in respect of Longitude exactly in δ , the Lat. of ψ being more Northerly by about 5 Diameters of φ which to the bare Eye seem'd but as one Diameter. The same observed *Hortensius* at *Amsterdam*.

The true place of $\odot$ was $3^{\circ}. 10^{\circ}. 5'. 46''$. The mean Anom of φ $5^{\circ}. 26'. 6'. 3''$. his Geocent. place $2^{\circ}. 26'. 19'. 24''$. and Lat. North $32'. 14''$. The mean Anom. of ψ $5^{\circ}. 24'. 10'. 57''$. his Geocentrick place $2^{\circ}. 26'. 19'. 42''$. with Lat. North $35'. 21''$. The Difference of Long. is $18''$. and of Lat. $3'. 7''$. ψ more Northerly than φ , as observed.

7 Other Observations of *Gassendus*.

Anno	Meas. D. H. '	Loc $\odot$ verus s o ' "	Anom ψ med s o ' "	Loc. ψ Comput. s o ' "	Loc. ψ Obser. s o ' "	Differ. ' "
1634	Sept. 22. 17. 15	5. 11. 49. 34	6. 3. 50. 42	4. 23. 59. 1	4. 24. 1.	+ 2
	Sept. 23. 17. 15	5. 12. 49. 13	6. 7. 56. 14	4. 24. 53. 43	4. 24. 53. $\frac{3}{4}$	0
1635	Jan. 6. 17. 10	8. 28. 58. 26	8. 17. 37. 5	8. 6. 21. 9	8. 6. 21. $\frac{1}{4}$	0
	Jan. 14. 17. 48	9. 7. 8. 20	9. 20. 27. 54	8. 12. 3. 7	8. 11. 59.	- 4
	Nov. 21. 5. 0	7. 11. 18. 3	4. 0. 59. 53	8. 2. 18. 15	8. 2. 19.	+ 1
1636	Jun. 16. 8. 10	2. 7. 21. 49	8. 12. 44. 38	2. 25. 12. 29	2. 25. 12. $\frac{1}{2}$	0
	Jul. 6. 8. 10	2. 26. 25. 5	11. 4. 35. 26	3. 23. 21. 56	3. 23. 21. $\frac{1}{2}$	- 1

Lastly, for compleating our *Mercurial Astronomy*. Anno 1661. April the 23d. being the day of the Coronation of our late most Gracious Sovereign King *Charles II.* That ingenious Gent. *Christianus Hugenius* of *Zulichem*, Mr. *Reeves*, with other Mathematical Friends and myself, (being together at *Long-Acre*) by the help of a good Telescope, with red Glasses for saving our Eyes, saw ψ from a little past one, untill two of the Clock, appearing in the Sun, as a round black spot, below and to the right hand: so that in the Heavens he was above and to the left from the Sun's Center, and enter'd on the Sun much about one of the Clock.

But at or near 2h. P.M. supposing the Semi diameter of $\odot$ $15'. 45''$. as by our Calculation, *Hugenius* determined the Distance of the Center of ψ from the Vertical Circle passing by the Center of $\odot$ $4'. 20''$. and from the nearest point of the Sun's visible periphery $3'. 24''$. that being certainly a little more, and this a little less than one fourth part of the Semidiameter of $\odot$. Afterwards Clouds interposed.

The Diameter of ψ to the Diameter of $\odot$ seemed scarce so much as 1 to 100.

At 1h. 58'. *T. A.* Equated 1h. 42'. The mean Anomaly of the Earth was $10^{\circ}. 5^{\circ}. 6'. 57''$. the Longitude of $\odot$ from the first * of γ $0^{\circ}. 15^{\circ}. 3'. 9''$. from the *Equinox* in δ $13^{\circ}. 27'. 24''$. The mean Anomaly of ψ $10^{\circ}. 17^{\circ}. 45'. 25''$. his Geocentrick Sidereal place $0^{\circ}. 15^{\circ}. 14'. 24''$. with Lat. North $5'. 10''$. The

The Distance of ☉ from the Vertex $42^{\circ}.39'$. the Angle of the Vertical Circle with the Ecliptick $45^{\circ}.34'$. the Parallax of ♄ from ☉ in Altitude $8''$. The apparent Semidiameter of ☉ $15'.45''$. Therefore ♄ was distant from the Vertical, by the Center of ☉ $4'.25''$. and within his Visible Periphery $3'.29''$.

Also the Apparent Semidiameter of ♄ was $9''$. that is to the Semid. of ☉ as 1 to 105.

Agreeing with all the observed Proportions.

Refraction of the Stars Observed by Tycho.

Alt.	Refract.
0	1 11
0	30. 0
1	21.30
2	15.30
3	12.30
4	11. 0
5	10. 0
6	9. 0
7	8.15
8	6.45
9	6. 0
10	5.30
11	5. 0
12	4.30
13	4. 0
14	3.30
15	3. 0
16	2.30
17	2. 0
18	1.15
19	0.30
20	0. 0

The Cause of this Refraction is the Atmosphere, or thickness of the Air near the Face of the Earth; whence the Stars and Planets seem always to rise sooner, and set later than they really do. It is varied by the Weather, and in Parts more Northerly hath been observed much greater; but in clearest Air when the Refraction is least, and within or near the Latitude of 55° . though Tycho admits that of the Sun a little more, we may generally in the appearance of the Luminaries, Planets and Stars, allow about the same proportion as in this Table, the Use whereof is thus;

Suppose the observed Altitude of a Star 5° . the Refraction correspondant is $10'$. which substracted from 5° . the residue is the true Altitude $4^{\circ}.50'$.

Here followeth,

A Catalogue of some famous Places, with their temporary Difference of Meridians from London, and Latitudes; the situation of those marked with an Asterisk being gathered by more certain Celestial Observation.

* Aleppo

Differ. Merid.		Latit.	Differ. Merid.		Latit.
H. ' "		o ' "	H. ' "		o ' "
* <i>Aleppo</i> ———	2.35.ori.	36.25	<i>Leyden</i> ———	0.19.ori.	52.10
<i>Alexandria</i> ———	2.01.ori.	30.58	<i>Lincoln</i> ———	0. 1.occ.	53.15
* <i>Amsterdam</i> ———	0.21.ori.	52.25	<i>Lisbon</i> ———	0.36.occ.	38.54
<i>Antioch</i> ———	2.35.ori.	36.15	<i>Liverpool</i> ———	0.10.occ.	53.22
<i>Antwerp</i> ———	0.18.ori.	51.12	* <i>LONDON</i> ———	0. 0.	51.32
<i>Araçta</i> ———	2.45.ori.	36. 0	<i>Lovan</i> ———	0.20.ori.	50.50
* <i>Aque Sextia</i> ———	0.22.ori.	43.33	<i>Lugdun. Batav.</i> ———	0.19.ori.	52.11
* <i>Avenio</i> ———	0.19.ori.	43.52	<i>Madrid</i> ———	0.12 $\frac{1}{2}$.occ.	40.14
<i>Babylon</i> ———	3. 1.ori.	35. 0	<i>Manchester</i> ———	0. 9.occ.	53.24
* <i>Bermudas</i> ———	4.14.occ.	32.25	<i>Massilia</i> ———	0.22.ori.	43.20
* <i>Bononia Italia</i> ———	0.46.ori.	44.30	* <i>Mexico</i> ———	6.50.occ.	20. 6
<i>Bristol</i> ———	0.11.occ.	51.28	<i>Milan</i> ———	0.33.ori.	45.25
* <i>Bruxells</i> ———	0.16.ori.	50.48	<i>Montpellier</i> ———	0.15.ori.	43.36
<i>Cambridge</i> ———	0. 2.ori.	52.17	<i>Moscua</i> ———	2.45.ori.	55.30
<i>Canterbury</i> ———	0. 5.ori.	51.17	<i>Munster</i> ———	0.30.ori.	52. 0
<i>Carmarthen</i> ———	0.17.occ.	52. 2	<i>Naples</i> ———	1. 0.ori.	40.40 $\frac{1}{2}$
<i>Cassels</i> ———	0.36.ori.	51.19	<i>Newcastle</i> ———	0. 1.occ.	55. 3
* <i>Cayro Grand Cair</i> ———	2.06.ori.	29.50	<i>Norimberg</i> 44.50 0.44 $\frac{1}{2}$.ori.		49.26 $\frac{1}{2}$
<i>Chester</i> ———	0.10.occ.	53.10	<i>Norwich</i> ———	0. 4.ori.	52.44
<i>Constantinople</i> ———	1.56.ori.	41. 6	<i>Orleans</i> ———	0. 6.ori.	48. 0
<i>Cork</i> ———	0.30.occ.	51.45	* <i>Oxford</i> ———	0. 5.occ.	51.43
<i>Cracovia</i> ———	1.21.ori.	49.58	* <i>Paris</i> ———	0.10.ori.	48.51
<i>Damascus</i> ———	2.36.ori.	34. 0	<i>Patavium</i> ———	0.46.ori.	45. 6
* <i>Dantzick</i> ———	1.16.ori.	54.23	<i>Prague</i> ———	0.56.ori.	50. 6
* <i>Dinia</i> ———	0.26.ori.	44. 6	<i>Ratishona</i> ———	0.50.ori.	49. 2
<i>Dublin</i> ———	0.26.occ.	53.12	<i>Rhodus</i> ———	1.54.ori.	36.46
<i>Dunkirk</i> ———	0.10.ori.	51.1 $\frac{1}{2}$	<i>Rochester</i> ———	0. 2.ori.	51.26
<i>Edinburg</i> ———	0.12.occ.	55.57	<i>Rome</i> ———	0.52.ori.	41.52
<i>Florence</i> ———	0.43.ori.	43.40	<i>Salamanca</i> ———	0.24.occ.	41.12
<i>Francfort Men</i> ———	0.32.ori.	50.10	<i>Shrewsbury</i> ———	0.11.occ.	52.48
<i>Francford Order</i> ———	1. 0.ori.	52.22	<i>Stetin</i> ———	0.58.ori.	53.36
<i>Geneva</i> ———	0.27.ori.	46.15	<i>Toledo</i> ———	0.16.occ.	39.54
<i>Gaunt</i> ———	0.16.ori.	50.55	* <i>Tubing</i> ———	0.38.ori.	48.34
<i>Grats</i> ———	1. 4.ori.	47. 2	* <i>Turin</i> ———	0.32.ori.	44.50
<i>Gratianopolis</i> ———	0.27.ori.	45.12	<i>Vienna. Aust.</i> ———	1. 4.ori.	48.20
* <i>Haphnia</i> ———	0.51.ori.	55.43	<i>Vilna</i> ———	1.50.ori.	54.30
<i>Hamburg</i> ———	0.40.ori.	53.43	* <i>Uraniburg</i> ———	0.52.ori.	55.54 $\frac{1}{2}$
<i>Heydelberg</i> ———	0.36.ori.	49.36	<i>Wittenberg</i> ———	0.52.ori.	51.53
<i>Hierusalem</i> ———	2.30.ori.	32.10	<i>Yarmouth</i> ———	0. 6.ori.	52.55
<i>Hull</i> ———	0. 1.occ.	53.50	<i>York</i> ———	0. 4.occ.	54. 0

TABULA DECLINATIONIS ECLIPTICÆ.

Sig.	♈	♉	♊	♋	♌	♍
0	0. 1. 11	0. 1. 11	0. 1. 11			
0	0. 0. 0.	11.30. 1	20.12. 6	30.		
1	0.23.55	12.51. 4	20.24.40	29		
2	0.47.51	12.11.56	20.36.51	28		
3	1.11.45	12.32.35	20.48.40	27		
4	1.35.38	12.53. 2	21. 0. 6	26		
5	1.59.30	13.13.17	21.11. 8	25		
6	2.23.20	13.33.18	21.21.47	24		
7	2.47. 7	13.53. 6	21.32. 2	23		
8	3.10.53	14.12.40	21.41.53	22		
9	3.34.35	14.32. 0	21.51.19	21		
10	3.58.14	14.51. 5	22. 0.21	20		
11	4.21.49	15. 9.55	22. 8.58	19		
12	4.45.20	15.28.29	22.17.10	18		
13	5. 8.47	15.46.48	22.24.57	17		
14	5.32. 9	16. 4.51	22.32.18	16		
15	5.55.25	16.22.28	22.39.14	15		
16	6.18.37	16.40. 7	22.45.43	14		
17	6.41.42	16.57.19	22.51.47	13		
18	7. 4.41	17.14.14	22.57.24	12		
19	7.27.33	17.30.51	23. 2.35	11		
20	7.50.18	17.47. 9	23. 7.19	10		
21	8.12.56	18. 3. 9	23.11.37	9		
22	8.35.26	18.18.49	23.15.28	8		
23	8.57.48	18.34.10	23.18.52	7		
24	9.20. 2	18.49.12	23.21.49	6		
25	9.42. 6	19. 3.53	23.24.19	5		
26	10. 4. 1	19.18.14	23.26.22	4		
27	10.25.47	19.32.14	23.27.57	3		
28	10.47.22	19.45.53	23.29. 5	2		
29	11. 8.47	19.59.11	23.29.46	1		
30	11.30. 1	20.12. 6	23.30. 0	0		
	♈	♉	♊	♋	Sig.	

A a

Tabula Ascensionum Rectarum.

Sig.	γ	δ	η	θ	λ	μ	
0	0. 1. "	0. 1. "	0. 1. "	0. 1. "	0. 1. "	0. 1. "	
0	0. 0. 0	27.53.59	57.48.25	90. 0. 0	122.11.35	152. 6. 1	
1	0.55. 1	28.51.21	58.50.58	91. 5.26	123.13.59	153. 3.15	
2	1.50. 3	29.48.52	59.53.42	92.10.51	124.16.12	154. 0.21	
3	2.45. 6	30.46.33	60.56.35	93.16.15	125.18.14	154.57.18	
4	3.40. 9	31.44.22	61.59.38	94.21.38	126.20. 6	155.54. 7	
5	4.25.14	32.42.21	63. 2.51	95.26.59	127.21.47	156.50.49	
6	5.30.20	33.40.29	64. 6.13	96.32.17	128.23.17	157.47.23	
7	6.25.28	34.38.48	65. 9.44	97.37.33	129.24.37	158.43.50	
8	7.20.39	35.37.16	66.13.24	98.42.46	130.25.45	159.40.10	
9	8.15.52	36.35.54	67.17.12	99.47.56	131.26.43	160.36.24	
10	9.11. 7	37.34.42	68.21. 9	100.53. 1	132.27.29	161.32.31	
11	10. 6.26	38.33.41	69.25.13	101.58. 2	133.28. 5	162.28.32	
12	11. 1.49	39.32.50	70.29.26	103. 2.59	134.28.30	163.24.27	
13	11.57.19	40.32.10	71.33.45	104. 7.50	135.28.44	164.20.17	
14	12.52.45	41.31.41	72.38.12	105.12.35	136.28.46	165.16. 1	
15	13.48.20	42.31.22	73.42.45	106.17.15	137.28.38	166.11.40	
16	14.43.59	43.31.14	74.47.25	107.21.48	138.28.19	167. 7.15	
17	15.39.43	44.31.16	75.52.10	108.26.15	139.27.50	168. 2.45	
18	16.35.33	45.31.30	76.57. 1	109.30.34	140.27.10	168.58.11	
19	17.31.28	46.31.55	78. 1.58	110.34.47	141.26.19	169.53.34	
20	18.27.29	47.32.31	79. 6.59	111.38.51	142.25.18	170.48.53	
21	19.23.36	48.33.17	80.12. 4	112.42.48	143.24. 6	171.44. 8	
22	20.19.50	49.34.15	81.17.14	113.46.36	144.22.44	172.39.21	
23	21.16.10	50.35.23	82.22.27	114.50.16	145.21.12	173.34.32	
24	22.12.37	51.36.43	83.27.43	115.53.47	146.19.31	174.29.40	
25	23. 9.11	52.38.13	84.33. 1	116.57. 9	147.17.39	175.24.46	
26	24. 5.52	53.39.54	85.38.22	118. 0.22	148.15.38	176.19.51	
27	25. 2.42	54.41.46	86.43.45	119. 3.25	149.13.27	177.14.54	
28	25.59.39	55.43.48	87.49. 9	120. 6.18	150.11. 8	178. 9.57	
29	26.56.45	56.46. 1	88.54.34	121. 9. 2	151. 8.39	179. 4.59	
30	27.53.59	57.48.25	90. 0. 0	122.11.35	152. 6. 1	180. 0. 0	

Tabula Ascensionum Rectarum.

Sig.	♈	♉	♊	♋	♌	♍
0	0	1	2	3	4	5
0	180. 0. 0	207.53.59	227.18.25	270 0. 0	302.11.25	332. 6. 1
1	180.55. 1	208.51.21	238.50.58	271. 5.26	303.13.59	333. 3.15
2	181.50. 3	209.48.52	239.53.42	272.10.51	304.16.12	334. 0.21
3	182.45. 6	210.46.33	240.56.35	273.16.15	305.18.14	334.57.18
4	183.40. 9	211.44.22	241.59.38	274.21.38	306.20. 6	335.54. 7
5	184.35.14	212.42.21	243. 2.51	275.26.59	307.21.47	336.50.49
6	185.30.20	213.40.29	244. 6.13	276.32.17	308.23.17	337.47.23
7	186.25.28	214.38.48	245. 9.44	277.37.33	309.24.37	338.43.50
8	187.20.39	215.37.16	246.13.24	278.42.46	310.25.45	339.40.10
9	188.15.52	216.35.54	247.17.12	279.47.56	311.26.43	340.36.24
10	189.11. 7	217.34.42	248.21. 9	280.53. 1	312.27.29	341.32.22
11	190. 6.20	218.33.41	249.25.12	281.58. 2	313.28. 5	342.28.32
12	191. 1.46	219.32.50	250.29.26	283. 2.59	314.28.30	343.24.27
13	191.57.15	220.32.10	251.33.45	284. 7.50	315.28.44	344.20.17
14	192.52.45	221.31.41	252.38.12	285.12.35	316.28.46	345.16. 7
15	193.48.20	222.31.22	253.42.45	286.17.15	317.28.28	346.11. 4
16	194.43.59	223.31.14	254.47.25	287.21.48	318.28.19	347. 7. 1
17	195.39.43	224.31.16	255.52.10	288.26.15	319.27.50	348. 2.41
18	196.35.32	225.31.30	256.57. 1	289.30.34	320.27.10	348.58.11
19	197.31.28	226.31.55	258. 1.58	290.34.47	321.26.19	349.53.24
20	198.27.29	227.32.21	259. 6.59	291.38.51	322.25.18	350.48. 5
21	199.23.36	228.33.17	260.12. 4	292.42.48	323.24. 0	351.43. 0
22	200.19.50	229.34.15	261.17.14	293.46.26	324.22.14	352.39.21
23	201.16.10	230.35.22	262.22.27	294.50.16	325.21.12	353.34.22
24	202.12.37	231.36.42	263.27.43	295.53.47	326.19.31	354.29.40
25	203. 9.11	232.38.12	264.33. 1	296.57. 9	327.17.29	355.24.46
26	204. 5.53	233.39.51	265.38.22	298. 0.29	328.15.38	356.19.51
27	205. 2.42	234.41.46	266.43.45	299. 3.25	329.13.27	357.14.54
28	205.59.39	235.43.48	267.49. 9	300. 6.18	330.11. 8	358. 9.57
29	206.56.45	236.46. 1	268.54.34	301. 9. 2	331. 8.39	359. 4.50
30	207.53.59	237.48.25	270. 0. 0	302.11.35	332. 6. 1	360. 0. 0

TABULÆ ÆQUATIONIS TEMPORIS.

Subtrahæ ab Apparente.						Addæ ad Apparente.							
Locus Solis Verus.						Anomalia Terræ Media.							
Sig.	V	♊	♋	♌	♍	Sig.	0	1	2	3	4	5	
gr.	°	'	"	°	'	gr.	°	'	"	°	'	"	gr.
0	0. 0	8. 24	8. 46	30		0	0. 0	3. 54	6. 48	7. 56	6. 57	4. 3	30
1	0. 20	8. 35	8. 36	29		1	0. 8	4. 1	6. 52	7. 56	6. 53	3. 55	29
2	0. 40	8. 45	8. 25	28		2	0. 16	4. 8	6. 56	7. 56	6. 49	3. 48	28
3	1. 0	8. 54	8. 14	27		3	0. 24	4. 15	7. 0	7. 56	6. 44	3. 40	27
4	1. 19	9. 3	8. 1	26		4	0. 33	4. 22	7. 4	7. 56	6. 40	3. 33	26
5	1. 39	9. 11	7. 49	25		5	0. 41	4. 28	7. 8	7. 55	6. 35	3. 25	25
6	1. 59	9. 18	7. 35	24		6	0. 49	4. 35	7. 11	7. 55	6. 30	3. 18	24
7	2. 18	9. 25	7. 21	23		7	0. 57	4. 42	7. 15	7. 54	6. 25	3. 10	23
8	2. 37	9. 31	7. 6	22		8	1. 5	4. 48	7. 18	7. 53	6. 20	3. 2	22
9	2. 57	9. 36	6. 51	21		9	1. 13	4. 55	7. 21	7. 52	6. 15	2. 54	21
10	3. 16	9. 41	6. 35	20		10	1. 21	5. 1	7. 24	7. 51	6. 10	2. 46	20
11	3. 34	9. 45	6. 19	19		11	1. 29	5. 7	7. 27	7. 49	6. 5	2. 38	19
12	3. 53	9. 49	6. 2	18		12	1. 37	5. 14	7. 30	7. 48	5. 59	2. 30	18
13	4. 11	9. 51	5. 45	17		13	1. 45	5. 20	7. 33	7. 46	5. 54	2. 22	17
14	4. 29	9. 53	5. 27	16		14	1. 53	5. 26	7. 35	7. 45	5. 48	2. 14	16
15	4. 47	9. 55	5. 9	15		15	2. 1	5. 32	7. 37	7. 43	5. 42	2. 6	15
16	5. 4	9. 55	4. 50	14		16	2. 9	5. 38	7. 40	7. 41	5. 36	1. 58	14
17	5. 21	9. 55	4. 31	13		17	2. 16	5. 43	7. 42	7. 38	5. 30	1. 49	13
18	5. 38	9. 54	4. 12	12		18	2. 24	5. 49	7. 44	7. 36	5. 24	1. 41	12
19	5. 54	9. 52	3. 52	11		19	2. 32	5. 54	7. 46	7. 34	5. 18	1. 33	11
20	6. 10	9. 50	3. 32	10		20	2. 40	6. 0	7. 47	7. 31	5. 11	1. 25	10
21	6. 26	9. 47	3. 12	9		21	2. 47	6. 5	7. 49	7. 28	5. 5	1. 16	9
22	6. 41	9. 43	2. 51	8		22	2. 55	6. 10	7. 50	7. 25	4. 58	1. 8	8
23	6. 55	9. 38	2. 30	7		23	3. 2	6. 15	7. 51	7. 22	4. 52	0. 59	7
24	7. 10	9. 33	2. 9	9		24	3. 10	6. 20	7. 53	7. 19	4. 45	0. 51	6
25	7. 23	9. 27	1. 48	5		25	3. 17	6. 25	7. 54	7. 16	4. 38	0. 42	5
26	7. 36	9. 20	1. 27	4		26	3. 25	6. 30	7. 54	7. 12	4. 31	0. 34	4

*Terræ Tabula Motus Medij ab Aphelio, & Æquinoctij
Præcessionis Vernalis, à 1 * v.*

Ann. Chr. Cur.	Anomal.	⊖	Præ.Æqu.	Ann.	Mot. Anomal.	Præ.	Mot. Anom.	Mo. An.	H	Mo. An.	H	Mo. An.
	° ' "		° ' "		° ' "	° ' "	° ' "	° ' "		° ' "		° ' "
1	6.23.19.56	0.	6.16.0	1	11.29.44.51	0.48	1	0.0.59.8	1	0.2.28.31	1	1.16.23
1501	6.14.36.11	0.	26.16.0	2	11.29.29.42	1.36	2	0.1.58.16	2	0.4.56.32	2	1.18.51
1581	6.14.8.15	0.	27.20.0	3	11.29.14.33	2.24	3	0.2.57.25	3	0.7.24.33	3	1.21.10
1601	6.14.1.16	0.	27.36.0	4	11.29.58.32	3.12	4	0.3.56.33	4	0.9.51.34	4	1.23.47
1621	6.13.54.17	0.	27.52.0	5	11.29.43.23	4.0	5	0.4.55.41	5	0.12.19.35	5	1.26.14
1641	6.13.47.18	0.	28.8.0	6	11.29.28.14	4.48	6	0.5.54.49	6	0.14.47.36	6	1.28.42
1661	6.13.40.19	0.	28.24.0	7	11.29.13.5	5.36	7	0.6.53.57	7	0.17.15.37	7	1.31.10
1681	6.13.33.20	0.	28.40.0	8	11.29.57.4	6.24	8	0.7.53.6	8	0.19.43.38	8	1.33.38
1701	6.13.26.21	0.	28.56.0	9	11.29.41.55	7.12	9	0.8.52.14	9	0.22.18.39	9	1.36.6
1721	6.13.19.22	0.	29.12.0	10	11.29.26.46	8.0	10	0.9.51.22	10	0.24.38.40	10	1.38.34
1741	6.13.12.23	0.	29.28.0	11	11.29.11.37	8.48	11	0.10.50.30	11	0.27.6.41	11	1.41.2
1761	6.13.5.24	0.	29.44.0	12	11.29.55.37	9.36	12	0.11.49.38	12	0.29.34.42	12	1.43.29
1781	6.12.58.25	1.	0.0.0	13	11.29.40.28	10.24	13	0.12.48.47	13	0.32.2.43	13	1.45.57
1801	6.12.51.26	1.	0.16.0	14	11.29.25.19	11.12	14	0.13.47.55	14	0.34.30.44	14	1.48.25
1901	6.12.16.31	1.	1.36.0	15	11.29.10.10	12.0	15	0.14.47.3	15	0.36.58.45	15	1.50.53
2001	6.11.49.36	1.	2.56.0	16	11.29.54.9	12.48	16	0.15.46.11	16	0.39.28.46	16	1.53.21
An- nis.	Mot. Anom. mal.	Præcess. Æqui.		17	11.29.39.0	13.36	17	0.16.45.19	17	0.41.53.47	17	1.55.49
20	11.29.52.41	0.	0.16.0	18	11.29.23.51	14.24	18	0.17.44.28	18	0.44.21.48	18	1.58.16
40	11.29.45.22	0.	0.32.0	19	11.29.8.42	15.12	19	0.18.43.36	19	0.46.49.49	19	2.0.44
60	11.29.38.3	0.	0.48.0	20	11.29.52.41	16.0	20	0.19.42.44	20	0.49.17.50	20	2.3.12
80	11.29.30.44	0.	1.4.0	Mens. A.Co.	° ' "		21	0.20.41.52	21	0.51.45.51	21	2.5.40
100	11.29.23.25	0.	1.20.0	Janua.	0.0.0.0	0	22	0.21.41.0	22	0.54.23.52	22	2.8.8
200	11.28.46.50	0.	2.40.0	Febr.	1.0.33.14	4	23	0.22.40.9	23	0.56.40.53	23	2.10.36
300	11.28.10.15	0.	4.0.0	Mart.	1.28.9.4	8	24	0.23.39.17	24	0.59.8.54	24	2.13.3
400	11.27.33.40	0.	5.20.0	April.	2.28.42.18	12	25	0.24.38.25	25	1.1.36.55	25	2.15.31
500	11.26.57.5	0.	6.40.0	Maij	3.28.16.24	16	26	0.25.37.33	26	1.4.4.56	26	2.17.59
600	11.26.20.30	0.	8.0.0	Junij	4.28.49.38	20	27	0.26.36.41	27	1.6.32.57	27	2.20.27
700	11.25.43.55	0.	9.20.0	Julij	5.28.23.44	24	28	0.27.35.50	28	1.9.0.58	28	2.22.55
800	11.25.7.20	0.	10.40.0	Aug.	6.28.56.58	28	29	0.28.34.58	29	1.11.27.59	29	2.25.23
900	11.24.30.45	0.	12.0.0	Sept.	7.29.30.12	32	30	0.29.34.6	30	1.13.55.60	30	2.27.50
1000	11.23.34.10	0.	13.20.0	Octo.	8.29.4.18	36	31	1.0.33.14				
2000	11.17.48.0	0.	26.40.0	Nov.	9.29.37.32	40	32	1.1.32.22				
3000	11.11.42.30	1.	10.0.0	Dec.	10.29.11.38	44						
4000	11.4.36.40	1.	23.20.0	In Anno Bissextili, post Februarium, adde unum diem & unius diei mo- tum.				Long. Aph. ⊕ à 1 * v				
5000	10.28.30.50	2.	6.40.0					s. o. 20.				
6000	10.22.25.00	2.	20.0.0					Diff. med. ⊕ à ⊙ — 100000 Eccentricitas. — 1732				

x32

Terra Tabula Equationis.

Ano med	Sig 0 Sub	Sig.1 Sub	Sig.2 Sub	Sig.3 Sub	Sig.4 Sub	Sig.5 Sub	
0	0 0 0	0.8.27	1.42. 1	1.59. 1	1.44.15	1. 0.41	30
1	0. 2. 2	1. 0.13	1.43. 4	1.59. 6	1.43.13	0.58.51	29
2	0. 4. 4	1. 1.58	1.44. 4	1.59. 5	1.42. 9	0.57. 0	28
3	0. 6. 6	1. 3.42	1.45. 4	1.59. 2	1.41. 3	0.55. 7	27
4	0. 8. 8	1. 5.25	1.46. 1	1.58.57	1.39.55	0.53.14	26
5	0.10.10	1. 7. 6	1.46.56	1.58.50	1.38.46	0.51.20	25
6	0.12.11	1. 8.47	1.47.50	7.58.41	1.37.34	0.49.25	24
7	0.14.12	1.10.27	1.48.11	1.58.30	1.36.21	0.47.28	23
8	0.16.13	1.12. 5	1.49.31	1.58.16	1.35. 6	0.45.31	22
9	0.18.14	1.13.42	1.50.18	1.58. 0	1.33.49	0.43.33	21
10	0.20.15	1.15.17	1.51. 4	1.57.42	1.32.20	0.41.25	20
11	0.22.15	1.16.52	1.51.48	1.57.22	1.31.10	0.39.35	19
12	0.24.15	1.18.25	1.52.29	1.57. 0	1.29.47	0.37.34	18
13	0.26.14	1.19.57	1.53. 9	1.56.35	1.28.23	0.35.33	17
14	0.28.13	1.21.27	1.53.47	1.56. 8	1.26.58	0.33.31	16
15	0.30.11	1.22.56	1.54.22	1.55.40	1.25.20	0.31.29	15
16	0.32. 9	1.24.23	1.54.56	1.55. 9	1.24. 1	0.29.26	14
17	0.34. 7	1.25.49	1.55.27	1.54.35	1.22.31	0.27.22	13
18	0.36. 3	1.27.13	1.55.57	1.54. 0	1.20.59	0.25.18	12
19	0.38. 0	1.28.36	1.56.24	1.53.23	1.19.25	0.23.13	11
20	0.39.55	1.29.58	1.56.49	1.52.43	1.17.50	0.21. 8	10
21	0.41.50	1.31.18	1.57.12	1.52. 2	1.16.13	0.19. 2	9
22	0.43.44	1.32.36	1.57.33	1.51.18	1.14.35	0.16.56	8
23	0.45.37	1.33.52	1.57.52	1.50.32	1.12.55	0.14.50	7
24	0.47.30	1.35. 7	1.58. 9	1.49.44	1.11.14	0.12.43	6
25	0.49.21	1.36.20	1.58.23	1.48.55	1. 9.32	0.10.36	5
26	0.51.12	1.37.32	1.58.36	1.48. 3	1. 7.48	0. 8.29	4
27	0.53. 2	1.38.42	1.58.46	1.47. 9	1. 6. 3	0. 6.22	3
28	0.54.51	1.39.50	1.58.54	1.46.14	1. 4.17	0. 4.15	2
29	0.56.39	1.40.56	1.59. 0	1.45.15	1. 2.29	0. 2. 7	1
30	0.58.27	1.42. 1	1.59. 4	1.44.15	1. 0.41	0. 0. 0	0
	Sig 11. Add.	Sig.10. Add.	Sig. 9. Add.	Sig 8. Add	Sig.7. Add.	Sig.6. Add	An

SOLIS TABULA LOCI GEOCENTRICI.

Anomalia Terræ Media.

Sig.	0	1	2	3	4	5
	Lo. ☉ ai * v	Lo. ☉ ai * v	Lo. ☉ ai * v	Lo. ☉ ai * v	Lo. ☉ ai * v	Lo. ☉ ai * v
	S. O. I. "	S. O. I. "	S. O. I. "	S. O. I. "	S. O. I. "	S. O. I. "
0	2 8.20. 0	3. 7.21.33	4. 6.37.59	5. 6.20.56	6. 6.35.45	7. 7.19.19
1	2. 9.17.58	3. 8.19.47	4. 7.36.56	5. 7.20.54	6. 7.36.47	7. 8.21. 9
2	2.10.15.56	3. 9.18. 2	4. 8.35.56	5. 8.20.55	6. 8.37.51	7. 9.23. 0
3	2.11.13.54	3.10.16.18	4. 9.34.56	5. 9.20.58	6. 9.38.57	7.10.24.53
4	2.12.11.52	3.11.14.35	4.10.33.59	5.10.21. 3	6.10.40. 5	7.11.26.46
5	2.13. 9.50	3.12.12.54	4.11.33. 4	5.11.21.10	6.11.41.14	7.12.28.40
6	2.14. 7.49	3.13.11.13	4.12.32.10	5.12.21.19	6.12.42.26	7.13.30.35
7	2.15. 5.48	3.14. 9.33	4.13.31.19	5.13.21.30	6.13.43.39	7.14.32.32
8	2.16. 3.47	3.15. 7.55	4.14.30.29	5.14.21.44	6.14.44.54	7.15.34.29
9	2.17. 1.46	3.16. 6.18	4.15.29.42	5.15.22. 0	6.15.46.11	7.16.36.27
10	2.17.59.45	3.17. 4.43	4.16.28.56	5.16.22.18	6.16.47.30	7.17.38.25
11	2.18.57.45	3.18. 3. 8	4.17.28.12	5.17.22.38	6.17.48.50	7.18.40.25
12	2.19.55.45	3.19. 1.35	4.18.27.31	5.18.23. 0	6.18.50.13	7.19.42.26
13	2.20.53.46	3.20. 0. 3	4.19.26.51	5.19.23.25	6.19.51.37	7.20.44.27
14	2.21.51.47	3.20.58.33	4.20.26.13	5.20.23.52	6.20.53. 2	7.21.46.29
15	2.22.49.49	3.21.57. 4	4.21.25.38	5.21.24.20	6.21.54.30	7.22.48.31
16	2.23.47.51	3.22.55.37	4.22.25. 4	5.22.24.51	6.22.55.59	7.23.50.34
17	2.24.45.53	3.23.54.11	4.23.24.33	5.23.25.25	6.23.57.29	7.24.52.38
18	2.25.43.57	3.24.52.47	4.24.24. 3	5.24.26. 0	6.24.59. 1	7.25.54.42
19	2.26.42. 0	3.25.51.24	4.25.23.36	5.25.26.37	6.26. 0.35	7.26.56.47
20	2.27.40. 5	3.26.50. 2	4.26.23.11	5.26.27.17	6.27. 2.10	7.27.58.52
21	2.28.38.10	3.27.48.42	4.27.22.48	5.27.27.58	6.28. 3.47	7.29. 0.58
22	2.29.36.16	3.28.47.24	4.28.22.27	5.28.28.42	6.29. 5.25	8. 0. 3. 4
23	3. 0.34.23	3.29.46. 8	4.29.22. 8	5.29.29.28	7. 0. 7. 5	8. 1. 5.10
24	3. 1.32.30	4. 0.44.53	5. 0.21.51	6. 0.30.16	7. 1. 8.46	8. 2. 7.17
25	3. 2.30.39	4. 1.43.40	5. 1.21.37	6. 1.31. 5	7. 2.10.28	8. 3. 9.24
26	3. 3.28.48	4. 2.42.28	5. 2.21.24	6. 2.31.57	7. 3.12.12	8. 4.11.31
27	3. 4.26.58	4. 3.41.18	5. 3.21.14	6. 3.32.51	7. 4.13.57	8. 5.13.38
28	3. 5.25. 9	4. 4.40.10	5. 4.21. 6	6. 4.33.46	7. 5.15.43	8. 6.15.45
29	3. 6.23.21	4. 5.39. 4	5. 5.21. 0	6. 5.34.45	7. 6.17.31	8. 7.17.53
30	3 7.21.33	4. 6.37.59	5. 6.20.56	6. 6.35.45	7. 7.19.19	8. 8.20. 0

SOLISTABULA LOCI GEOCENTRICI.

Anomalia Terra Media.

Sig.	6	7	8	9	10	11
	[L. ☉ ai * V]	[Lo. ☉ ai * V]	[Lo. ☉ ai * V]	[Lo. ☉ ai * V]	[Lo. ☉ ai * V]	[Lo. ☉ ai * V]
	s. o. l. "	s. o. l. "	s. o. l. "	s. o. l. "	s. o. l. "	s. o. l. "
	0 8. 8.20.	0 9. 9.20.41	10 10. 4.15	11 10.19. 4	0 10. 2. 11	11. 9.18.27
1	8. 9.22. 79	10.22.29	10.11. 5.15	11.11.19. 0	0.11. 0.56	1.10.16.39
2	8.10.24.15	9.41.24.17	10.12. 6.14	11.12.18.54	0.11.59.50	1.11.14.51
3	8.11.26.22	9.12.26. 3	10.13. 7. 9	11.13.18.46	0.12.58.42	1.12.13. 2
4	8.12.28.29	9.13.27.48	10.14. 8. 3	11.14.18.36	0.13.57.32	1.13.11.12
5	8.12.20.26	9.14.29.22	10.15. 8.55	11.15.18.23	0.14.56.20	1.14. 9.21
6	8.14.32.43	9.15.31.14	10.16. 9.4	11.16.18. 9	0.15.55. 7	1.15. 7.30
7	8.15.34.50	9.16.32.55	10.17.10.22	11.17.17.52	0.16.53.52	1.16. 5.37
8	8.16.36.56	9.17.34.35	10.18.11.18	11.18.17.32	0.17.52.36	1.17. 3.44
9	8.17.39. 2	9.18.36.12	10.19.12. 2	11.19.17.12	0.18.51.18	1.18. 1.50
10	8.18.41. 8	9.19.37.50	10.20.12.42	11.20.16.49	0.19.49.58	1.18.59.55
11	8.19.43.13	9.20.39.25	10.21.13.23	11.21.16.24	0.20.48.36	1.19.58. 0
12	8.20.45.18	9.21.40.59	10.22.14. 0	11.22.15.57	0.21.47.13	1.20.56. 3
13	8.21.47.22	9.22.42.31	10.23.14.35	11.23.15.27	0.22.45.49	1.21.54. 7
14	8.22.49.26	9.23.44. 1	10.24.15. 9	11.24.14.56	0.23.44.23	1.22.52. 9
15	8.23.51.29	9.24.45.30	10.25.15.40	11.25.14.22	0.24.42.56	1.23.50.11
16	8.24.53.31	9.25.46.58	10.26.16. 8	11.26.13.47	0.25.41.27	1.24.48.13
17	8.25.55.33	9.26.48.23	10.27.16.35	11.27.13. 9	0.26.39.57	1.25.46.14
18	8.26.57.34	9.27.49.47	10.28.17. 0	11.28.12.29	0.27.38.25	1.26.44.15
19	8.27.59.35	9.28.51.10	10.29.17.22	11.29.11.48	0.28.36.52	1.27.42.15
20	8.29. 1.35	9.29.52.30	11. 0.17.42	0. 0.11. 4	0.29.35.17	1.28.40.15
21	9. 0. 3.33	10.0.53.49	11. 1.18. 0	0. 1.10.18	1. 0.33.42	1.29.38.14
22	9. 1. 5.31	10.1.55. 6	11. 2.18.16	0. 2. 9.31	1. 1.32. 5	2. 0.36.13
23	9. 2. 7.28	10.2.56.21	11. 3.18.30	0. 3. 8.41	1. 2.30.27	2. 1.34.12
24	9. 3. 9.25	10.3.57.34	11. 4.18.41	0. 4. 7.50	1. 3.28.47	2. 2.32.11
25	9. 4.11.20	10.4.58.46	11. 5.18.50	0. 5. 6.56	1. 4.27. 6	2. 3.30.10
26	9. 5.13.14	10.5.59.55	11. 6.18.57	0. 6. 6. 1	1. 5.25.25	2. 4.28. 8
27	9. 6.15. 7	10.7. 1. 3	11. 7.19. 2	0. 7. 5. 4	1. 6.23.42	2. 5.26. 6
28	9. 7.17. 0	10.8. 2. 9	11. 8.19. 5	0. 8. 4. 4	1. 7.21.58	2. 6.24. 4
29	9. 8.18.51	10.9. 3.13	11. 9.19. 6	0. 9. 3. 4	1. 8.20.13	2. 7.22. 2
30	9. 9.20.41	10.10.4.15	11.10.19. 4	0.10. 2. 1	1. 9.18.27	2. 8.20. 0

Tabula Logarithmorum à Sole Terræ Distantiarum.

Anomalia Terræ Media

o	Sig. 0	Sig. 1	Sig. 2	Sig. 3	Sig. 4	Sig. 5	o
0	5.007458	5.006497	5.003840	5.000130	4.996323	4.993470	30
1	5.007456	5.006433	5.003729	4.999999	4.996207	4.993402	29
2	5.007453	5.006367	5.003617	4.999868	4.996092	4.993337	28
3	5.007448	5.006300	5.003502	4.999736	4.995978	4.993274	27
4	5.007440	5.006231	5.003388	4.999605	4.995865	4.993213	26
5	5.007430	5.006160	5.003272	4.999474	4.995754	4.993154	25
6	5.007418	5.006087	5.003155	4.999342	4.995644	4.993096	24
7	5.007404	5.006012	5.003037	4.999211	4.995535	4.993041	23
8	5.007388	5.005935	5.002918	4.999080	4.995427	4.992988	22
9	5.007370	5.005857	5.002799	4.998949	4.995321	4.992938	21
10	5.007350	5.005777	5.002678	4.998819	4.995216	4.992890	20
11	5.007327	5.005695	5.002556	4.998689	4.995113	4.992844	19
12	5.007302	5.005611	5.002434	4.998559	4.995012	4.992800	18
13	5.007275	5.005526	5.002311	4.998430	4.994912	4.992759	17
14	5.007246	5.005439	5.002187	4.998301	4.994813	4.992720	16
15	5.007214	5.005350	5.002062	4.998172	4.994716	4.992682	15
16	5.007180	5.005260	5.001937	4.998044	4.994621	4.992648	14
17	5.007145	5.005168	5.001811	4.997916	4.994527	4.992616	13
18	5.007107	5.005074	5.001685	4.997789	4.994435	4.992586	12
19	5.007067	5.004979	5.001558	4.997662	4.994345	4.992558	11
20	5.007025	5.004883	5.001430	4.997536	4.994256	4.992532	10
21	5.006982	5.004785	5.001302	4.997411	4.994169	4.992510	9
22	5.006936	5.004685	5.001173	4.997287	4.994084	4.992490	8
23	5.006888	5.004584	5.001044	4.997163	4.994001	4.992472	7
24	5.006838	5.004482	5.000914	4.997040	4.993919	4.992456	6
25	5.006786	5.004378	5.000784	4.996918	4.993839	4.992443	5
26	5.006732	5.004273	5.000654	4.996797	4.993761	4.992432	4
27	5.006676	5.004167	5.000523	4.996677	4.993686	4.992423	3
28	5.006618	5.004059	5.000392	4.996558	4.993612	4.992417	2
29	5.006558	5.003950	5.000261	4.996440	4.993540	4.992414	1
30	5.006497	5.003840	5.000130	4.996323	4.993470	4.992412	0
	Sig. 11	Sig. 10	Sig. 9	Sig. 8	Sig. 7	Sig. 6	

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Tabula Mediorum Motuum.

Ann. Chr. Cur.	Anomia S. O. ' "	Apo.ab Æq. S. O. ' "	ab Æqui. S. O. ' "	An- nia.	Mo.Anom S. O. ' "	Mot. Apog. S. O. ' "	mot. ð ret. S. O. ' "
I.	6.29.12.45	9.12.15.0	8.28.51.0	1	2.28.43.13	1.10.39.50	0.19.19.44
1501	0.29.54.0	3.29.45.0	1.25.43.30	2	5.27.26.26	2.21.19.39	1.8.39.28
1581	3.8.49.0	4.15.5.0	10.8.21.30	3	8.26.9.38	4.1.59.29	1.27.59.12
1601	4.18.32.45	7.18.55.0	9.11.31.0	4	0.7.56.45	5.12.46.0	2.17.22.6
1621	5.28.16.30	10.22.45.0	8.14.40.30	5	3.6.39.58	6.23.25.50	3.6.41.50
1641	7.8.0.15	1.26.35.0	7.17.50.0	6	6.5.23.11	8.4.5.39	3.26.1.34
1661	8.17.44.0	5.0.25.0	6.20.59.30	7	9.4.6.23	9.14.45.29	4.15.21.18
1681	9.27.27.45	8.4.15.0	5.24.9.0	8	0.15.53.30	10.25.32.0	5.4.44.12
1701	11.7.11.30	11.8.5.0	4.27.18.30	9	3.14.36.43	0.6.11.50	5.24.3.56
1721	0.16.55.15	2.11.55.0	4.0.28.0	10	6.13.19.56	1.16.51.39	6.13.23.40
1741	1.26.39.0	5.15.45.0	3.3.37.30	11	9.12.3.8	2.27.31.29	7.2.43.24
1761	3.6.22.45	8.19.35.0	2.6.47.0	12	0.23.50.15	4.8.18.0	7.22.6.18
1781	4.16.6.30	11.23.25.0	1.9.56.30	13	3.22.33.28	5.18.57.50	8.11.26.2
1801	5.25.50.15	2.27.15.0	0.13.6.0	14	6.21.16.41	6.29.37.39	9.0.45.46
1901	0.14.29.0	6.16.25.0	7.28.53.30	15	9.19.59.53	8.10.17.29	9.20.5.30
2001	7.3.7.45	10.5.35.0	3.14.41.0	16	1.1.47.0	9.21.4.0	10.9.28.24
An- nia.	Mot. Ano. S. O. ' "	Mot. Apog. S. O. ' "	mot. ð ret. S. O. ' "	17	4.0.30.13	11.1.43.50	10.28.48.8
20	1.9.43.45	3.3.50.0	0.26.50.30	18	6.29.13.26	0.12.23.39	11.18.7.52
40	2.19.27.30	6.7.40.0	1.23.41.0	19	9.27.56.38	1.23.3.29	0.7.27.36
60	3.29.11.15	9.11.30.0	2.20.31.30	20	1.9.43.45	3.3.50.0	0.26.50.30
80	5.8.55.0	0.15.20.0	3.17.22.0	Menf.	Mo.Anom S. O. ' "	Mot. Apog. S. O. ' "	mot. ð ret. S. O. ' "
100	6.18.38.45	3.19.10.0	4.14.12.30	A.Ce.	S. O. ' "	S. O. ' "	S. O. ' "
200	1.7.17.30	7.8.20.0	8.28.25.0	Janua.	0.0.0.0	0.0.0.0	0.0.0.0
300	7.25.56.15	10.27.50.0	1.12.37.30	Febr.	1.15.0.53	0.3.27.13	1.38.30
400	2.74.35.0	2.16.40.0	5.26.50.0	Mart.	1.20.50.3	0.6.34.23	3.7.28
500	9.3.13.45	6.5.50.0	10.11.2.30	April.	3.5.50.56	0.10.1.36	4.45.58
600	3.21.52.30	9.25.0.0	2.25.15.0	Maij.	4.7.47.54	0.13.22.8	6.21.17
700	10.10.31.15	1.14.10.0	7.9.27.30	Junij.	5.22.48.47	0.16.49.21	7.59.47
800	4.29.10.0	5.3.20.0	11.23.40.0	Julij.	6.24.45.45	0.20.9.53	9.35.6
900	11.17.48.45	8.22.30.0	4.7.52.30	Aug.	8.9.4.38	0.23.37.6	11.13.36
1000	6.6.27.30	0.11.40.0	8.22.5.0	Sept.	9.24.47.31	0.27.4.19	12.52.6
2000	0.12.55.0	0.23.20.0	5.14.10.0	Octo.	10.26.44.29	1.0.24.51	14.27.25
3000	6.19.22.30	1.5.0.0	2.6.15.0	Nov.	0.11.45.22	1.3.52.5	16.3.55
4000	0.25.50.0	1.16.40.0	10.28.20.0	Dece.	1.13.42.20	1.7.12.37	17.41.14
5000	7.2.17.30	1.28.20.0	7.20.25.0	In Anno Bisextili post Februarium addendum diem & unius diei motum.			
6000	1.8.45.0	2.10.0.0	4.12.30.0				

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Tabula Mediorum Motuum.

Die.	mot. anom.			mot. Ap.	no. Ω ret.			Ho.	mot. anom.			Apog.	Ω r.	H.	mo. anom.			Apog.	Ω r.
	s.	o.	'.		o.	'.	''		o.	'.	''				o.	'.	''		
1	0.13.	3.54		0.6.41	0.3.	11			0.13.	3.54		0.17	0.8	31	16.52.32	8.38	4.6		
2	0.26.	7.48		0.13.22	0.6.	21			0.26.	7.48		0.33	0.16	32	17.25.12	8.55	4.14		
3	1.9.11.42			0.20.3	0.9.	32		1	0.32.40			0.50	0.24	33	17.57.52	9.11	4.22		
4	1.22.15.36			0.26.44	0.12.	43		2	1.5.19			1.7	0.32	34	18.30.31	9.28	4.30		
5	2.5.19.30			0.33.25	0.15.	53		3	1.37.59			1.24	0.40	35	19.3.11	9.45	4.38		
6	2.18.23.24			0.40.6	0.19.	4		4	2.10.39			1.40	0.48	36	19.35.51	10.2	4.46		
7	3.1.27.18			0.46.47	0.22.	14		5	2.43.19			1.57	0.56	37	20.8.31	10.18	4.54		
8	3.14.31.12			0.53.29	0.25.	25		6	3.15.58			2.14	1.4	38	20.41.10	10.35	5.2		
9	3.27.35.6			1.0.10	0.28.	36		7	3.48.38			2.30	1.11	39	21.13.50	10.52	5.10		
10	4.10.39.0			1.6.51	0.31.	46		8	4.21.18			2.47	1.19	40	21.46.30	11.8	5.18		
11	4.23.42.53			1.13.32	0.34.	57		9	4.53.58			3.4	1.27	41	22.19.10	11.25	5.26		
12	5.6.46.47			1.20.13	0.38.	8		10	5.26.37			3.21	1.35	42	22.51.49	11.42	5.34		
13	5.19.50.41			1.26.54	0.41.	18		11	5.59.17			3.54	1.43	43	23.24.29	11.59	5.42		
14	6.2.54.35			1.33.35	0.44.	29		12	6.31.57			4.11	1.51	44	23.57.9	12.15	5.50		
15	6.15.58.29			1.40.16	0.47.	40		13	7.4.37			4.27	2.7	45	24.29.49	12.32	5.57		
16	6.29.2.23			1.46.57	0.50.	50		14	7.37.16			4.44	2.15	46	25.2.28	12.49	6.5		
17	7.12.6.17			1.53.38	0.54.	1		15	8.9.56			5.1	2.23	47	25.35.8	13.5	6.13		
18	7.25.10.11			2.0.19	0.57.	12		16	8.42.36			5.18	2.31	48	26.7.48	13.22	6.21		
19	8.8.14.5			2.7.0	1.0.	22		17	9.15.16			5.34	2.39	49	26.40.28	13.39	6.29		
20	8.21.17.59			2.13.41	1.3.	33		18	9.47.55			5.51	2.47	50	27.13.7	13.56	6.37		
21	9.4.21.53			2.20.22	1.6.	43		19	10.20.35			6.8	2.55	51	27.45.47	14.12	6.45		
22	9.17.25.47			2.27.3	1.9.	54		20	10.53.15			6.24	3.3	52	28.18.27	14.29	6.53		
23	10.0.29.41			2.33.45	1.13.	5		21	11.25.55			6.41	3.11	53	28.51.7	14.46	7.1		
24	10.13.33.35			2.40.26	1.16.	15		22	11.58.34			6.58	3.19	54	29.23.46	15.2	7.9		
25	10.26.37.29			2.47.7	1.19.	26		23	12.31.14			7.14	3.27	55	29.56.26	15.19	7.17		
26	11.9.41.23			2.53.48	1.22.	37		24	13.3.54			7.31	3.34	56	30.29.6	15.36	7.25		
27	11.22.45.17			3.0.29	1.25.	47		25	13.36.34			7.48	3.42	57	31.1.46	15.53	7.33		
28	0.5.49.11			3.7.10	1.28.	58		26	14.9.13			8.5	3.50	58	31.34.25	16.9	7.41		
29	0.18.53.5			3.13.51	1.32.	9		27	14.41.53			8.21	3.58	59	32.7.5	16.26	7.49		
30	1.1.56.59			3.20.32	1.35.	19		28	15.14.33					60	32.39.45	16.43	7.57		
31	1.15.0.53			3.27.13	1.38.	30		29	15.47.13										
32	1.28.4.46			3.33.54	1.41.	41		30	16.19.52										

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Tabula Equationis Eccentrici.

Tabula Reflectionis.

Anoma. lia D media.	Sig. 6. Sub.	Sig. 1. Sub.	Sig. 2. Sub.		Diff. D à 0 du.	Si. 6. add.	Si. 1. add.	Si. 2. add.	
	Sig. 6. Add.	Sig. 7. Add.	Sig. 8. Add.			Si. 6. Sub.	Si. 7. Sub.	Si. 8. Sub.	
0	0. 1 11	0. 1 11	0. 1 11	0	0	1 11	1 11	1 11	0
0	0. 0. 0	2.30.43	4.21.13	30	0	0. 0	18.47	32.31	30
1	0. 5.16	2.35.15	4.23.49	29	1	0.39	19.20	32.51	29
2	0.10.31	2.39.44	4.26.20	28	2	1.19	19.54	33. 9	28
3	0.15.46	2.44.11	4.28.46	27	3	1.58	20.27	33.28	27
4	0.21. 1	2.48.34	4.31. 7	26	4	2.37	21. 0	33.45	26
5	0.26.16	2.52.55	4.33.23	25	5	3.16	21.32	34. 2	25
6	0.31.30	2.57.12	4.35.35	24	6	3.56	22. 4	34.18	24
7	0.36.43	3. 1.26	4.37.41	23	7	4.35	22.36	34.34	23
8	0.41.56	3. 5.37	4.39.42	22	8	5.14	23. 7	34.49	22
9	0.47. 8	3. 9.44	4.41.38	21	9	5.53	23.38	35. 4	21
10	0.52.20	3.13.48	4.43.29	20	10	6.31	24. 8	35.17	20
11	0.57.30	3.17.48	4.45.15	19	11	7.10	24.38	35.30	19
12	1. 2.39	3.21.45	4.46.55	18	12	7.48	25. 8	35.43	18
13	1. 7.47	3.25.38	4.48.30	17	13	8.27	25.37	35.55	17
14	1.12.54	3.29.27	4.50. 0	16	14	9. 5	26. 5	36. 6	16
15	1.18. 0	3.33.13	4.51.25	15	15	9.43	26.33	36.16	15
16	1.23. 4	3.36.54	4.52.44	14	16	10.21	27. 1	36.26	14
17	1.28. 7	3.40.32	4.53.58	13	17	10.59	27.28	36.35	13
18	1.33. 8	3.44. 6	4.55. 7	12	18	11.36	27.54	36.44	12
19	1.38. 7	3.47.35	4.56.10	11	19	12.14	28.21	36.52	11
20	1.43. 5	3.51. 1	4.57. 8	10	20	12.51	28.46	36.59	10
21	1.48. 0	3.54.22	4.58. 0	9	21	13.27	29.11	37. 6	9
22	1.52.54	3.57.39	4.58.47	8	22	14. 4	29.36	37.11	8
23	1.57.46	4. 0.51	4.59.28	7	23	14.40	30. 0	37.16	7
24	2. 2.35	4. 3.59	5. 0. 4	6	24	15.16	30.23	37.21	6
25	2. 7.23	4. 7. 3	5. 0.34	5	25	15.52	30.46	37.25	5
26	2.12. 8	4.10. 2	5. 0.59	4	26	16.28	31. 8	37.28	4
27	2.16.50	4.12.57	5. 1.18	3	27	17. 3	31.30	37.30	3
28	2.21.30	4.15.47	5. 1.32	2	28	17.38	31.51	37.32	2
29	2.26. 8	4.18.32	5. 1.41	1	29	18.12	32.11	37.33	1
30	2.30.43	4.21.13	5. 1.43	0	30	18.47	32.31	37.33	0
	Sig. 11. Add.	Sig. 10. Add.	Sig. 9. Add.	Anoma. lia D media.		Si. 11. Sub.	Si. 10. Sub.	Si. 9. Sub.	Diff D à 0 dupl.
	Sig. 1. Sub.	Sig. 4. Sub.	Sig. 3. Sub.			Si. 5. add.	Si. 4. add.	Si. 3. add.	

Diametri Circuli Evecttionis Logarithmus. ————— 3.640432.

Tabula Logarithmorum à Terra Lunæ Distantiarum.

Anomalia » Media.

0	Sig. 0	Sig. 1	Sig. 2	Sig. 3	Sig. 4	Sig. 5	0
0	5.029668	5.026200	5.016277	1.001610	4.985591	4.972970	30
1	5.029664	5.025968	5.015851	5.001074	4.985088	4.972665	29
2	5.029653	5.025728	5.015419	5.000537	4.984588	4.972368	28
3	5.029633	5.025482	5.014982	4.999998	4.984093	4.972081	27
4	5.029606	5.025228	5.014540	4.999458	4.983602	4.971802	26
5	5.029571	5.024967	5.014093	4.998917	4.983116	4.971534	25
6	5.029528	5.024699	5.013640	4.998375	4.982634	4.971274	24
7	5.029477	5.024424	5.013183	4.997832	4.982158	4.971025	23
8	5.029419	5.024142	5.012722	4.997290	4.981686	4.970785	22
9	5.029353	5.023853	5.012255	4.996747	4.981220	4.970555	21
10	5.029279	5.023557	5.011784	4.996203	4.980759	4.970335	20
11	5.029197	5.023254	5.011309	4.995659	4.980304	4.970126	19
12	5.029108	5.022944	5.010830	4.995117	4.979856	4.969927	18
13	5.029012	5.022628	5.010346	4.994575	4.979412	4.969738	17
14	5.028907	5.022304	5.009858	4.994033	4.978975	4.969559	16
15	5.028794	5.021974	5.009367	4.993492	4.978545	4.969391	15
16	5.028674	5.021638	5.008871	4.992952	4.978120	4.969232	14
17	5.028547	5.021294	5.008371	4.992412	4.977703	4.969085	13
18	5.028411	5.020945	5.007869	4.991874	4.977293	4.968944	12
19	5.028268	5.020590	5.007363	4.991337	4.976890	4.968822	11
20	5.028118	5.020228	5.006853	4.990803	4.976494	4.968706	10
21	5.027960	5.019860	5.006341	4.990270	4.976106	4.968602	9
22	5.027794	5.019485	5.005826	4.989739	4.975724	4.968509	8
23	5.027621	5.019105	5.005307	4.989211	4.975351	4.968427	7
24	5.027440	5.018718	5.004786	4.988685	4.974986	4.968355	6
25	5.027252	5.018326	5.004262	4.988162	4.974629	4.968294	5
26	5.027057	5.017928	5.003736	4.987641	4.974280	4.968244	4
27	5.026854	5.017523	5.003207	4.987124	4.973939	4.968206	3
28	5.026643	5.017113	5.002677	4.986610	4.973607	4.968179	2
29	5.026425	5.016698	5.002144	4.986099	4.973284	4.968162	1
30	5.026200	5.016277	5.001610	4.985591	4.972970	4.968156	0
	Sig. 11	Sig. 10	Sig. 9	Sig. 8	Sig. 7	Sig. 6	

Tabula Equationis Nodorum Lunæ.

Dift. D à ☉ dupl.	Sig. 0. Sub.	Sig. 1. Sub.	Sig. 2. Sub.	
	Sig. 6. Add.	Sig. 7. Add.	Sig. 8. Add.	
0	0. 1. "	0. 1. "	0. 1. "	0
0	0. 0. 0	0.52.30	1.30.56	30
1	0. 1.50	0.54. 4	1.31.50	29
2	0. 3.40	0.55.38	1.32.42	28
3	0. 5.30	0.57.11	1.33.33	27
4	0. 7.19	0.58.43	1.34.22	26
5	0. 9. 9	1. 0.13	1.35.10	25
6	0.10.58	1. 1.43	1.35.55	24
7	0.12.48	1. 3.11	1.36.39	23
8	0.14.37	1. 4.38	1.37.21	22
9	0.16.25	1. 6. 4	1.38. 1	21
10	0.18.14	1. 7.29	1.38.40	20
11	0.20. 2	1. 8.53	1.39.17	19
12	0.21.50	1.10.15	1.39.52	18
13	0.23.37	1.11.36	1.40.25	17
14	0.25.24	1.12.56	1.40.56	16
15	0.27.10	1.14.15	1.41.25	15
16	0.28.56	1.15.31	1.41.53	14
17	0.30.42	1.16.47	1.42.18	13
18	0.32.27	1.18. 2	1.42.42	12
19	0.34.11	1.19.14	1.43. 4	11
20	0.35.54	1.20.26	1.43.24	10
21	0.37.37	1.21.36	1.43.42	9
22	0.39.20	1.22.44	1.43.59	8
23	0.41. 1	1.23.51	1.44.13	7
24	0.42.42	1.24.57	1.44.26	6
25	0.44.22	1.26. 0	1.44.36	5
26	0.46. 1	1.27. 3	1.44.45	4
27	0.47.40	1.28. 3	1.44.51	3
28	0.49.17	1.29. 2	1.44.56	2
29	0.50.54	1.30. 0	1.44.59	1
30	0.52.30	1.30.56	1.45. 0	0
Sig. 11. Add. Sig. 10. Add. Sig. 9. Add. Dist. D				
Sig. 5. Sub. Sig. 4. Sub. Sig. 3. Sub. à ☉ du.				

Tabula Excessus Lunæ Latitudi- nis maxime amplius 5 gradibus.

Dift.	Sig. 0.	Sig. 1.	Sig. 2.	
D à ☉	Sig. 6.	Sig. 7.	Sig. 8.	
0	1. "	1. "	1. "	0
0	0. 0	4.30	13.20	30
1	0. 0	4.46	13.46	29
2	0. 1	5. 3	14. 2	28
3	0. 3	5.20	14.17	27
4	0. 5	5.38	14.32	26
5	0. 8	5.55	14.47	25
6	0.12	6.13	15. 1	24
7	0.16	6.31	15.19	23
8	0.21	6.49	15.28	22
9	0.26	7. 8	15.41	21
10	0.33	7.26	15.54	20
11	0.39	7.45	16. 6	19
12	0.47	8. 4	16.17	18
13	0.55	8.22	16.28	17
14	1. 3	8.41	16.38	16
15	1.12	9. 0	16.48	15
16	1.22	9.19	16.57	14
17	1.32	9.38	17. 5	13
18	1.43	9.56	17.13	12
19	1.54	10.15	17.21	11
20	2. 6	10.34	17.27	10
21	2.19	10.52	17.34	9
22	2.32	11.11	17.39	8
23	2.45	11.29	17.44	7
24	2.59	11.47	17.48	6
25	3.13	12. 5	17.52	5
26	3.28	12.22	17.55	4
27	3.43	12.40	17.57	3
28	3.58	12.57	17.59	2
29	4.14	13.14	18. 0	1
30	4.30	13.30	18. 0	0
Sig. 11. Sig. 10. Sig. 9. Dist				
Sig. 5. Sig. 4. Sig. 3. D à ☉				

*Lunæ Tabula Latitudinis veræ ac Reductionis à propria
Orbita ad Eclipticam, in Syzygiis*

Arg.	Sig. o. Bor.	Sub.	Sig. r. Bor.	Sub.	Sig. 2. Bor.	Sub.	
Lar.	Sig. 6. Aufst.	Sub.	Sig. 7. Aufst.	Sub.	Sig. 8. Aufst.	Sub.	
o	Latitud.	Red.	Latitud.	Red.	Latitud.	Red.	o
	O. ' . "	' . "	O. ' . "	' . "	O. ' . "	' . "	
0	0. 0. 0	0. 0	2.29.51	5.40	4.19.44	5.41	30
1	0. 5.14	0.14	2.34.22	5.47	4.22.18	5.34	29
2	0.10.27	0.27	2.38.50	5.53	4.24.49	5.26	28
3	0.15.41	0.41	2.43.15	5.59	4.27.14	5.18	27
4	0.20.54	0.55	2.47.37	6. 4	4.29.34	5.10	26
5	0.26. 7	1. 8	2.51.56	6. 9	4.31.50	5. 2	25
6	0.31.19	1.22	2.56.11	6.14	4.34. 0	4.53	24
7	0.36.31	1.35	3. 0.24	6.18	4.36. 6	4.43	23
8	0.41.42	1.48	3. 4.33	6.21	4.38. 6	4.34	22
9	0.46.52	2. 1	3. 8.39	6.24	4.40. 2	4.23	21
10	0.52. 2	2.14	3.12.42	6.27	4.41.52	4.13	20
11	0.57.10	2.27	3.16.41	6.29	4.43.37	4. 2	19
12	1. 2.18	2.40	3.20.36	6.31	4.45.17	3.51	18
13	1. 7.24	2.52	3.24.28	6.32	4.46.52	3.40	17
14	1.12.29	3. 4	3.28.16	6.33	4.48.21	3.29	16
15	1.17.33	3.16	3.32. 0	6.33	4.49.45	3.17	15
16	1.22.36	3.28	3.35.40	6.33	4.51. 4	3. 5	14
17	1.27.37	3.40	3.39.17	6.32	4.52.18	2.53	13
18	1.32.36	3.51	3.42.49	6.31	4.53.26	2.40	12
19	1.37.34	4. 2	3.46.17	6.29	4.54.28	2.28	11
20	1.42.29	4.12	3.49.42	6.27	4.55.26	2.15	10
21	1.47.23	4.23	3.53. 2	6.25	4.56.18	2. 2	9
22	1.52.16	4.33	3.56.17	6.22	4.57. 4	1.49	8
23	1.57. 6	4.43	3.59.29	6.18	4.57.45	1.35	7
24	2. 1.54	4.52	4. 2.36	6.14	4.58.21	1.22	6
25	2. 6.39	5. 1	4. 5.39	6.10	4.58.51	1. 8	5
26	2.11.23	5. 9	4. 8.37	6. 5	4.59.16	0.55	4
27	2.16. 4	5.18	4.11.30	6. 0	4.59.35	0.41	3
28	2.20.42	5.26	4.14.19	5.54	4.59.49	0.27	2
29	2.25.18	5.33	4.17. 4	5.47	4.59.57	0.14	1
30	2.29.51	5.40	4.19.44	5.41	5. 0. 0	0. 0	0
	Sig. 11. Aufst.	Add.	Sig. 10. Aufst.	Add.	Sig. 9. Aufst.	Add.	Lar.
	Sig. 5. Bor.	Add.	Sig. 4. Bor.	Add.	Sig. 3. Bor.	Add.	Arg.

*Tabula Motuum Horariorum, Semidiametrorum ac Luminarum
Parallaxarum.*

Anom. in dia. S. O	Hor. ☉ Verus. I. "	Horar. ☽ Pri. Aeq. I. "	Horar. ☽ in S. zy. I. "	Semi. ☉ Verus. I. "	Semi. ☽ ho in Sy. I. "	Paral. ☽ ho in Sy. I. "	Anomal media. S. O	Diff. ☉ à Verr. O	Par. ☽ ☉ "
0. 0	2.23	30. 5	29.33	15.39	14.19	52.59	12. 0	0	0
0. 6	2.23	30. 6	29.34	15.39	14.19	53. 0	11.24	3	1
0.12	2.23	30. 9	29.37	15.39	14.20	53. 3	11.18	6	2
0.18	2.23	30.13	29.43	15.39	14.22	53. 8	11.12	9	2
0.24	2.23	30.19	29.51	15.40	14.24	53.15	11. 6	12	3
1. 0	2.23	30.28	30. 3	15.41	14.26	53.24	11. 0	15	4
1. 6	2.24	30.38	30.17	15.42	14.29	53.35	10.24	18	5
1.12	2.24	30.49	30.31	15.43	14.33	53.48	10.18	21	5
1.18	2.24	31. 1	30.47	15.44	14.37	54. 3	10.12	24	6
1.24	2.25	31.15	31. 6	15.45	14.41	54.20	10. 6	27	7
2. 0	2.25	31.30	31.27	15.47	14.46	54.38	10. 0	30	7
2. 6	2.26	31.46	31.50	15.48	14.52	54.58	9.24	33	8
2.12	2.26	32. 3	32.14	15.50	14.57	55.20	9.18	36	9
2.18	2.27	32.21	32.39	15.51	15. 3	55.42	9.12	39	9
2.24	2.27	32.35	33. 4	15.53	15.10	56. 6	9. 6	42	10
3. 0	2.28	32.56	33.29	15.55	15.17	56.31	9. 0	45	11
3. 6	2.28	33.14	33.55	15.56	15.23	56.56	8.24	48	11
3.12	2.29	33.32	34.22	15.58	15.30	57.22	8.18	51	12
3.18	2.29	33.50	34.50	16. 0	15.37	57.48	8.12	54	12
3.24	2.30	34. 7	35.17	16. 2	15.44	58.13	8. 6	57	13
4. 0	2.30	34.23	35.42	16. 3	15.51	58.38	8. 0	60	13
4. 6	2.31	34.38	36. 5	16. 5	15.57	59. 2	7.24	63	13
4.12	2.31	34.52	36.26	16. 6	16. 4	59.25	7.18	66	14
4.18	2.32	35. 4	36.46	16. 7	16. 9	59.46	7.12	69	14
4.24	2.32	35.15	37. 5	16. 8	16.14	60. 5	7. 6	72	14
5. 0	2.32	35.25	37.23	16. 9	16.19	60.22	7. 0	75	14
5. 6	2.33	35.34	37.38	16.10	16.23	60.36	6.24	78	15
5.12	2.33	35.40	37.51	16.11	16.26	60.48	6.18	81	15
5.18	2.33	35.44	38. 0	16.11	16.28	60.56	6.12	84	15
5.24	2.33	35.47	38. 5	16.12	16.29	61. 1	6. 6	87	15
6. 0	2.33	35.48	38. 6	16.12	16.30	61. 2	6. 0	90	15

Tabula Motus Medij **LUNÆ à SOLE.**

Ann. Chr. Cur.	Mot. D à ☉ s o ' "	An- nis.	Mot. D à ☉ s o ' "	Dia.	Mot. D à ☉ s o ' "	Hor.	Mo D à ☉ o ' "	H.	Mo D à ☉ o ' "
I.	6.24.31.49	1	4. 9.37.23	1	0.12.11.27	I	I ' ' ' ' "	I	I ' ' ' ' "
1501	4.10.26.49	2	8.19.14.45	2	0.24.22.53	"	" ' ' ' ' "	"	" ' ' ' ' "
1581	10. 4. 5.45	3	0.28.52. 7	3	1. 6.34.20	1	0.30.29	31	15.41.47
1601	2.17.30.29	4	5.20.40.57	4	1.18.45.47	2	1. 0.57	32	16.15.16
1621	7. 0.55.13	5	10. 0.18.20	5	2. 0.57.13	3	1.31.26	33	16.45.44
1641	11.14.19.57	6	2. 9.55.42	6	2.13. 8.40	4	2. 1.54	34	17.16.13
1661	3.27.44.41	7	6.19.33. 4	7	2.25.20. 7	5	2.32.23	35	17.46.42
1681	8.11. 9.25	8	11.11.21.54	8	3. 7.31.33	6	3. 2.52	36	18.17.10
1701	0.24.34. 9	9	3.20.59.17	9	3.19.43. 0	7	3.33.20	37	18.47.39
1721	5. 7.58.53	10	8. 0.36.39	10	4. 1.54.27	8	4. 3.47	38	19.18. 7
1741	9.21.23.37	11	6.10.14. 1	11	4.14. 5.53	9	4.34.18	39	19.28.36
1761	2. 4.48.21	12	5. 2. 2.50	12	4.26.17.20	10	5. 4.46	40	20.19. 5
1781	6.18.13. 5	13	9.11.40.13	13	5. 8.28.47	11	5.35.15	41	20.49.33
1801	11. 1.37.49	14	1.21.17.35	14	5.20.40.13	12	6. 5.43	42	21.20. 2
1901	9. 8.41.29	15	6. 0.54.57	15	6. 2.51.40	13	6.36.12	43	21.50.31
2001	7.15.45. 9	16	10.22.43.47	16	6.15. 3. 7	14	7. 6.41	44	22.20.59
An- nis.	Mot. D à ☉ s o ' "	17	3. 2.31.10	17	6.27.14.33	15	7.37. 9	45	22.51.28
20	4.13.24.44	18	7.11.58.32	18	7. 9.26. 0	16	8. 7.38	46	23.21.56
40	8.26.49.28	19	11.21.35.54	19	7.21.37.27	17	8.38. 6	47	23.52.25
60	11.10.14.12	20	4.13.24.44	20	8. 3.48.53	18	9. 8.35	48	24.22.54
80	5.23.38.56			21	8.16. 0.20	19	9.39. 4	49	24.53.22
100	10. 7. 3.40			22	8.28.11.47	20	10. 9.32	50	25.23.51
200	8.14. 7.20			23	9.10.23.13	21	10.40. 1	51	25.54.19
300	6.21.11. 0	Menf	Mot. D à ☉ s o ' "	24	9.22.34.40	22	11.10.30	52	26.24.48
400	4.28.14.40	A.Co.		25	10. 4.46. 7	23	11.40.58	53	26.55.17
500	3. 5.18.20	Janua	0. 0. 0. 0	26	10.16.57.33	24	12.11.27	54	27.25.45
600	1.12.22. 0	Febr.	0.17.54.47	27	10.29. 9. 0	25	12.41.55	55	27.56.14
700	11.19.25.40	Mart.	11.29.15.14	28	11.11.20.27	26	13.12.24	56	28.26.43
800	9.26.29.20	April.	0.17.10. 2	29	11.23.31.53	27	13.42.53	57	28.57.11
900	8. 3.33. 0	Maij.	0.22.53.22	30	0. 5.43.20	28	14.13.21	58	29.27.40
1000	6.10.36.40	Junij.	1.10.48.10	31	0.17.54.47	29	14.43.50	59	29.58. 8
1100	0.21.13.20	Julij.	1.16.31.31	32	1. 0. 6.13	30	15.14.19	60	30.28.37
1200	7. 1.50. 0	Aug.	2. 4.26.18						
1300	1.12.26.40	Sept.	2.22.21. 6						
1400	7.23. 3.20	Octo.	2.28. 4.27						
1500		Nov.	3.15.59.14						
1600		Dece.	3.21.42.34						

*In Anno Biflexili post Februarium adde unum
diem & unius diei motum.*

SATURNI

Tabula Motus Medii ab Aphelio.

An. Chr. Current	Anomal. h s o ' "	Annis.	Mot. Anom. s o ' "	Dies.	Mot. Anom. o ' "	Motus Anom.	Motus Anom.
1	6. 8.34.18	1	0.12.12.41	1	0. 2. 0	H. 1 ' "	H. 1 ' "
1701	5.10.11.48	2	0.24.25.22	2	0 4. 1	1 ' "	1 ' "
1781	1.27.53. 0	3	1. 6.38. 2	3	0. 6. 1	1 0. 5	31 2.36
1791	10. 2.17.38	4	1.18.52.44	4	0 8. 2	2 0.10	32 2.41
1621	6. 6.41.16	5	2. 1. 5.24	5	0.10. 2	3 0.15	33 2.46
1641	2.11. 4.54	6	2.13.18. 5	6	0.12. 3	4 0.20	34 2.51
1661	10.15.28.32	7	2.25.30.46	7	0.14. 3	5 0.25	35 2.56
1681	6.19.52.10	8	3. 7.45.27	8	0.16. 4	6 0.30	36 3. 1
1701	2.24.15.48	9	3.19.58. 8	9	0.18. 4	7 0.35	37 3. 6
1721	10.28.39.26	10	4 2.10.49	10	0.20. 5	8 0.40	38 3.11
1741	7. 3. 3. 4	11	4.14.23.30	11	0.22. 5	9 0.45	39 3.16
1761	3. 7.26.42	12	4.26.38.11	12	0.24. 5	10 0.50	40 3.21
1781	11.11.50.20	13	5. 8.50.52	13	0.26. 6	11 0.55	41 3.26
1801	7.16.13.58	14	5.21. 3.32	14	0.28. 6	12 1. 0	42 3.31
1901	0. 8.12. 8	15	6. 3.16.13	15	0.30. 7	13 1. 5	43 3.36
2001	5. 0.10.18	16	6.15.30.54	16	0.32. 7	14 1.10	44 3.41
An- nis.	Mot. Anom. s o ' "	17	6.27.43.35	17	0.34. 8	15 1.15	45 3.46
20	8. 4.23.38	18	7. 9.56.16	18	0.36. 8	16 1.20	46 3.51
40	4. 8.47.16	19	7.22. 8.57	19	0.38. 9	17 1.25	47 3.56
60	0.13.10.54	20	8. 4.23.38	20	0.40. 9	18 1.30	48 4. 1
80	8.17.34.32	Mens. A.Com	Mot. Anom. o ' "	21	0.42.10	19 1.35	49 4. 6
100	4.21.58.10	Janua.	0. 0. 0	22	0.44.10	20 1.40	50 4.11
200	9.13.56.20	Febr.	1. 2.14	23	0.46.10	21 1.45	51 4.16
300	2. 5.54.30	Mart.	1.58.27	24	0.48.11	22 1.50	52 4.21
400	6.27.52.40	April.	3. 0.41	25	0.50.11	23 1.55	53 4.26
500	11.19.50.50	Maij.	4. 0.55	26	0.52.12	24 2. 0	54 4.31
600	4.11.49. 0	Junij.	5. 3. 9	27	0.54.12	25 2. 5	55 4.36
700	9. 3.47.10	Julij.	6. 3.22	28	0.56.13	26 2.10	56 4.41
800	1.25.45.20	Aug.	7. 5.36	29	0.58.13	27 2.16	57 4.46
900	6.17.43.30	Sept.	8. 7.50	30	1. 0.14	28 2.21	58 4.51
1000	11. 9.41.40	Octo.	9. 8. 4	31	1. 2.14	29 2.26	59 4.56
2000	10.19.23.20	Nov.	10.10.18	32	1. 4.15	30 2.31	60 5. 1
3000	9.29. 5. 0	Decr.	11.10.32				
4000	9. 8.46.40	In Anno Bissextili post Februarium; adde u- num diem & unius diei motum.			Long. Aphelii h à 1 * γ. — 7. 28. 30. 0		
5000	8.18.28.20				Long. Orb. h à 1 * γ. — 2. 22. 30. 0		
6000	7.28.10. 0				Incl. Orb. h — 2. 30. 0		
					Dist. med. h à ☉ — 953800		
					Eccentricitat. — 54700		

SATURNI

Tabula Loci Heliocentrici.

Anom. med.	Sig. O.			Sig. I.		
	Long h _{ai} *Υ	Inc. Bor.	Dif. à ☉ Cur.	Long h _{ai} *Υ	Inc. Aust.	Dif. à ☉ Cur.
	S O I "	O I "	Logarith.	S O I "	O I "	Logarith.
0	7.28.31.13	I. I. 0	6.003608	8.25.24.16	0. 7.36	6.000823
1	7.29.24.46	0.58.51	6.003609	8.26.18.32	0. 9.58	6.000632
2	8. 0.18.19	0.56.42	6.003605	8.27.12.50	0.12.20	6.000435
3	8. 1.11.52	0.54.31	6.003593	8.28. 7.11	0.14.42	6.000232
4	8. 2. 5.24	0.52.20	6.003575	8.29. 1.36	0.17. 4	6.000022
5	8. 2.58.58	0.50. 9	6.003550	8.29.56. 3	0.19.25	5.999806
6	8. 3.52.32	0.47.56	6.003519	9. 0.50.34	0.21.47	5.999585
7	8. 4.46. 6	0.45.43	6.003481	9. 1.45. 8	0.24. 8	5.999358
8	8. 5.39.41	0.43.29	6.003435	9. 2.39.46	0.26.29	5.999125
9	8. 6.33.16	0.41.14	6.003386	9. 3.34.27	0.28.50	5.998887
10	8. 7.26.52	0.38.59	6.003328	9. 4.29.11	0.31.10	5.998642
11	8. 8.20.30	0.36.43	6.003263	9. 5.24. 0	0.33.30	5.998391
12	8. 9.14. 8	0.34.26	6.003193	9. 6.18.53	0.35.50	5.998135
13	8.10. 7.48	0.32. 9	6.003115	9. 7.13.49	0.38.10	5.997874
14	8.11. 1.28	0.29.52	6.003032	9. 8. 8.49	0.40.29	5.997607
15	8.11.55.10	0.27.34	6.002942	9. 9. 3.53	0.42.47	5.997324
16	8.12.48.53	0.25.15	6.002845	9. 9.59. 2	0.45. 5	5.997056
17	8.13.42.37	0.22.56	6.002743	9.10.54.15	0.47.23	5.996772
18	8.14.36.24	0.20.37	6.002633	9.11.49.32	0.49.40	5.996484
19	8.15.30.13	0.18.17	6.002517	9.12.44.54	0.51.57	5.996189
20	8.16.24. 2	0.15.57	6.002395	9.13.40.20	0.54.12	5.995890
21	8.17.17.53	0.13.37	6.002267	9.14.35.51	0.56.27	5.995585
22	8.18.11.47	0.11.16	6.002131	9.15.31.26	0.58.42	5.995277
23	8.19. 5.43	0. 8.55	6.001990	9.16.27. 6	I. 0.56	5.994962
24	8.19.59.40	0. 6.34	6.001842	9.17.22.52	I. 3. 9	5.994643
25	8.20.53.40	0. 4.12	6.001688	9.18.18.42	I. 5.21	5.994319
26	8.21.47.42	0. 1.51	6.001527	9.19.14.38	I. 7.32	5.993989
27	8.22.41.47	Aust.31	6.001361	9.20.10.39	I. 9.42	5.993656
28	8.23.35.54	0. 2.53	6.001188	9.21. 6.43	I.11.52	5.993317
29	8.24.30. 4	0. 5.15	6.001009	9.22. 2.54	I.14. 1	5.992973
30	8.25.24.16	0. 7.36	6.000823	9.22.59.10	I.16. 8	5.992625

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 2.			Sig. 3.		
	Long. h. à I * γ	Inc. Au.	Dif. à ☉ Cur.	Long. h. à I * γ	Inc. Au.	Dif. à ☉ Cur.
	S O I "	O I "	Logarith.	S O I "	O I "	Logarith.
0	9.22.59.10	1.16. 8	5.992625	10.21.54.42	2. 9. 9	5.980576
1	9.23.55.32	1.18.15	5.992273	10.22.54.18	2 10.27	5.980139
2	9.24.52. 0	1.20.20	5.991917	10.23.54. 1	2.11.43	5.979700
3	9.25.48.32	1.22.25	5.991557	10.24.53.51	2.12.57	5.979260
4	9.26.45.10	1.24.28	5.991192	10.25.53.49	2.14. 8	5.978819
5	9.27.41.55	1.26.30	5.990824	10.26.53.54	2.15.17	5.978278
6	9.28.38.45	1.28.31	5.990451	10.27.54. 6	2.16.24	5.977936
7	9.29.35.41	1.30.30	5.990074	10.28.54.25	2.17.29	5.977494
8	10. 0.32.42	1.32.29	5.989694	10.29.54.52	2.18.31	5.977051
9	10. 1.29.50	1.34.26	5.989310	11. 0.55.27	2.19.30	5.976609
10	10. 2.27. 4	1.36.21	5.988922	11. 1.56. 8	2.20.27	5.976166
11	10. 3.24.24	1.38.16	5.988532	11. 2.56.58	2.21.22	5.975724
12	10. 4.21.50	1.40. 8	5.988137	11. 3.57.54	2.22.14	5.975282
13	10. 5.19.23	1.42. 0	5.987739	11. 4.58.59	2.23. 3	5.974841
14	10. 6.17. 3	1.43.50	5.987328	11. 6. 0.12	2.23.50	5.974400
15	10. 7.14.48	1.45.38	5.986934	11. 7. 1.31	2.24.34	5.973960
16	10. 8.12.40	1.47.24	5.986527	11. 8. 2.58	2.25.16	5.973520
17	10. 9.10.38	1.49. 9	5.986117	11. 9. 4.32	2.25.54	5.973083
18	10.10. 8.44	1.50.53	5.985704	11.10. 6.13	2.26.30	5.972647
19	10.11. 6.56	1.52.35	5.985288	11.11. 8. 2	2.27. 4	5.972211
20	10.12. 5.14	1.54.14	5.984870	11.12.10. 0	2.27.34	5.971777
21	10.13. 3.40	1.55.53	5.984450	11.13.12. 3	2.28. 2	5.971345
22	10.14. 2.13	1.57.29	5.984027	11.14.14.15	2.28.27	5.970915
23	10.15. 0.52	1.59. 3	5.983603	11.15.16.33	2.28.49	5.970487
24	10.15.59.38	2. 0.36	5.983176	11.16.18.59	2.29. 8	5.970060
25	10.16.58.30	2. 2. 6	5.982747	11.17.21.34	2.29.24	5.969627
26	10.17.57.29	2. 3.35	5.982315	11.18.24.14	2.29.37	5.969216
27	10.18.56.37	2. 5. 2	5.981883	11.19.27. 3	2.29.47	5.968798
28	10.19.55.50	2. 6.26	5.981448	11.20.29.57	2.29.55	5.968382
29	10.20.55.12	2. 7.48	5.981013	11.21.33. 1	2.29.59	5.967970
30	10.21.54.42	2. 9. 9	5.980576	11.22.36.10	2.30. 0	5.967559

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Tabula Loci Heliocentrici.

Anom med	Sig. 4.			Sig. 5.		
	Lon. h d i * Y	Inc. Au.	D. J. d © Cur.	Lon. h d i * Y	Inc. Au.	D. J. d © Cur.
0	S O I II	O I II	Logarith.	S O I II	O I II	Logarith.
	11.22.36.10	2.30. 0	5.967559	0.25. 1.23	2. 6.30	5.957445
1	11.23.39.27	2.29.58	5.967153	0.26. 7.40	2. 4.55	5.957203
2	11.24.42.52	2.29.53	5.966750	0.27.14. 0	2. 3.18	5.956969
3	11.25.46.22	2.29.45	5.966350	0.28.20.25	2. 1.37	5.956742
4	11.26.50. 0	2.29.34	5.965954	0.29.26.53	1.59.54	5.956523
5	11.27.53.45	2.29.20	5.965562	1. 0.33.26	1.58. 8	5.956312
6	11.28.57.38	2.29. 3	5.965175	1. 1.40. 3	1.56.20	5.956107
7	0. 0. 1.37	2.28.43	5.964791	1. 2.46.44	1.54.28	5.955912
8	0. 1. 5.42	2.28.19	5.964412	1. 3.53.27	1.52.34	5.955724
9	0. 2. 9.54	2.27.52	5.964036	1. 5. 0.15	1.50.37	5.955544
10	0. 3.14.13	2.27.23	5.963666	1. 6. 7. 5	1.48.38	5.955373
11	0. 4.18.37	2.26.50	5.963300	1. 7.13.58	1.46.36	5.955210
12	0. 5.23.10	2.26.14	5.962939	1. 8.20.55	1.44.31	5.955055
13	0. 6.27.48	2.25.34	5.962584	1. 9.27.54	1.42.24	5.954910
14	0. 7.32.32	2.24.52	5.962233	1.10.34.57	1.40.15	5.954771
15	0. 8.27.23	2.24. 6	5.961888	1.11.42. 1	1.38. 3	5.954641
16	0. 9.42.20	2.23.18	5.961549	1.12.49. 8	1.35.49	5.954520
17	0.10.47.23	2.22.26	5.961214	1.13.56.16	1.33.32	5.954408
18	0.11.52.32	2.21.31	5.960886	1.15. 3.26	1.31.14	5.954304
19	0.12.57.46	2.20.33	5.960564	1.16.10.28	1.28.53	5.954209
20	0.14. 2. 6	2.19.31	5.960248	1.17.17.53	1.26.20	5.954122
21	0.15. 8.33	2.18.27	5.959938	1.18.25. 9	1.24. 5	5.954044
22	0.16.14. 4	2.17.20	5.959634	1.19.32.27	1.21.39	5.953974
23	0.17.19.42	2.16. 9	5.959337	1.20.39.45	1.19.10	5.953914
24	0.18.25.24	2.14.55	5.959046	1.21.47. 4	1.16.35	5.953862
25	0.19.31.11	2.13.39	5.958762	1.22.54.24	1.14. 7	5.953819
26	0.20.37. 3	2.12.19	5.958484	1.24. 1.45	1.11.32	5.953706
27	0.21.43. 1	2.10.56	5.958214	1.25. 9. 7	1. 8.57	5.953761
28	0.22.49. 4	2. 9.30	5.957951	1.26.16.20	1. 6.19	5.953745
29	0.23.55.11	2. 8. 2	5.957695	1.27.23.50	1. 3.40	5.953738
30	0.25. 1.23	2. 6.30	5.957445	1.28.31.13	1. 1. 0	5.953740

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 6.			Sig. 7.		
	Long. h _{el} * γ	Inc. Aust.	D. f. a. © Cur.	Long. h _{el} * γ	Inc. Bor.	D. f. a. © Cur.
0	S 0 1 11	0 1 11	Logarith.	S 0 1 11	0 1 11	Logarith.
0	1.28.31.13	1. 1. 0	5.953740	3 1.59.34	0.24.45	5.957728
1	1.29.38.36	0.58.18	5.953750	3. 3. 5.40	0.27.36	5.957982
2	2. 0.45.57	0.55.35	5.953769	3. 4.11.42	0.30.25	5.958242
3	2. 1.53.18	0.52.50	5.953797	3. 5.17.40	0.33.14	5.958509
4	2. 3. 0.39	0.50. 4	5.953884	3. 6.23.32	0.36. 2	5.958782
5	2. 4. 7.59	0.47.18	5.953879	3. 7.29.19	0.38.49	5.959062
6	2. 5.15.18	0.44.30	5.953934	3. 8.35. 0	0.41.35	5.959349
7	2. 6.22.35	0.41.41	5.953997	3. 9.40.37	0.44.19	5.959642
8	2. 7.29.52	0.38.51	5.954069	3.10.46. 9	0.47. 3	5.959940
9	2. 8.37. 8	0.36. 0	5.954150	3.11.51.35	0.49.45	5.960245
10	2. 9.44.21	0.33. 9	5.954239	3.12.56.57	0.52.26	5.960555
11	2.10.51.34	0.30.17	5.954337	3.14. 2.11	0.55. 6	5.960871
12	2.11.58.43	0.27.24	5.954443	3.15. 7.20	0.57.44	5.961193
13	2.13. 5.51	0.24.31	5.954558	3.16.12.24	1. 0.20	5.961520
14	2.14.12.57	0.21.38	5.954680	3.17.17.21	1. 2.55	5.961853
15	2.15.20. 0	0.18.44	5.954812	3.18.22.12	1. 5.29	5.962191
16	2.16.27. 1	0.15.49	5.954951	3.19.26.58	1. 8. 1	5.962534
17	2.17.34. 1	0.12.54	5.955099	3.20.31.37	1.10.31	5.962882
18	2.18.40.56	0.10. 0	5.955254	3.21.36.10	1.13. 0	5.963234
19	2.19.47.49	0. 7. 5	5.955418	3.22.40.37	1.15.26	5.963592
20	2.20.54.38	0. 4.10	5.955590	3.23.44.56	1.17.51	5.963954
21	2.22. 1.25	0. 1.15	5.955769	3.24.49.10	1.20.14	5.964320
22	2.23. 8. 8	Bor 1.40	5.955957	3.25.53.17	1.22.35	5.964691
23	2.24.14.47	0. 4.35	5.956153	3.26.57.18	1.24.54	5.965065
24	2.25.21.23	0. 7.29	5.956355	3.28. 1.11	1.27.11	5.965443
25	2.26.27.55	0.10.23	5.956566	3.29. 4.59	1.29.26	5.965825
26	2.27.34.24	0.13.16	5.956784	4. 0. 8.40	1.31.39	5.966211
27	2.28.40.47	0.16. 9	5.957009	4. 1.12.13	1.33.50	5.966600
28	2.29.47. 7	0.19. 2	5.957241	4. 2.15.39	1.35.58	5.966993
29	3. 0.53.23	0.21.54	5.957481	4. 3.19. 0	1.38. 5	5.967389
30	3. 1.59.34	0.24.45	5.957728	4. 4.22.12	1.40. 9	5.967789

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Tabula Loci Heliocentrici.

Anom med	Sig. 8.			Sig. 9.		
	Long. h. a. i. * γ	Inc. Bor.	Dif. a. ☉ Cur. Logarith.	Long. h. a. i. * γ	Inc. Bor.	Dif. a. ☉ Cur. Logarith.
0	S 0 1 "	0 1 "		S 0 1 "	0 1 "	
0	4. 4.22.12	1.40. 9	5.967789	5. 5. 2.56	2.23. 6	5.980507
1	4. 5.25.18	1.42.11	5.968191	5. 6. 2.27	2.23.52	5.980933
2	4. 6.28.18	1.44.11	5.968595	5. 7. 1.50	2.24.34	5.981358
3	4. 7.31. 9	1.46. 8	5.969003	5. 8. 1. 5	2.25.14	5.981782
4	4. 8.33.54	1.48. 3	5.969412	5. 9. 0.14	2.25.52	5.982205
5	4. 9.26.31	1.49.56	5.969825	5. 9.59.15	2.26.27	5.982627
6	4.10.39. 2	1.51.46	5.970240	5.10.58.10	2.26.59	5.983046
7	4.11.41.25	1.53.34	5.970657	5.11.56.58	2.27.28	5.983463
8	4.12.43.40	1.55.19	5.971076	5.12.55.40	2.27.55	5.983879
9	4.13.45.50	1.57. 2	5.971496	5.13.54.15	2.28.19	5.984293
10	4.14.47.51	1.58.42	5.971918	5.14.52.43	2.28.41	5.984704
11	4.15.49.46	2. 0.20	5.972343	5.15.51. 4	2.29. 0	5.985113
12	4.16.51.33	2. 1.56	5.972768	5.16.49.19	2.29.16	5.985520
13	4.17.53.12	2. 3.29	5.973194	5.17.47.28	2.29.30	5.985925
14	4.18.54.44	2. 4.59	5.973621	5.18.45.29	2.29.41	5.986327
15	4.19.56.10	2. 6.27	5.974050	5.19.43.25	2.29.49	5.986726
16	4.20.57.27	2. 7.52	5.974480	5.20.41.13	2.29.56	5.987123
17	4.21.58.38	2. 9.14	5.974910	5.21.38.56	2.29.59	5.987517
18	4.22.59.42	2.10.34	5.975341	5.22.36.32	2.30. 0	5.987907
19	4.24. 0.38	2.11.51	5.975771	5.23.34. 3	2.29.58	5.988296
20	4.25. 1.27	2.13. 6	5.976203	5.24.31.26	2.29.54	5.988680
21	4.26. 2. 8	2.14.18	5.976635	5.25.28.44	2.29.48	5.989062
22	4.27. 2.42	2.15.27	5.977067	5.26.25.57	2.29.39	5.989439
23	4.28. 3. 9	2.16.34	5.977498	5.27.23. 2	2.29.27	5.989814
24	4.29. 3.28	2.17.38	5.977930	5.28.20. 1	2.29.13	5.990186
25	5. 0. 3.41	2.18.39	5.978361	5.29.16.56	2.28.57	5.990553
26	5. 1. 3.46	2.19.38	5.978792	6. 0.13.45	2.28.38	5.990917
27	5. 2. 3.45	2.20.34	5.979222	6. 1.10.27	2.28.17	5.991278
28	5. 3. 3.35	2.21.27	5.979651	6. 2. 7. 4	2.27.54	5.991634
29	5. 4. 3.19	2.22.18	5.980080	6. 3. 3.36	2.27.28	5.991986
30	5. 5. 3.56	2.23. 6	5.980507	6. 4. 0. 2	2.27. 0	5.992335

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 10.			Sig. 11.		
	Lon. $\text{h}^{\circ} \text{m}^{\circ} \text{s}^{\circ}$	Inc. Bor.	Dis. $\text{a}^{\circ} \text{Cur.}$	Lon. $\text{h}^{\circ} \text{m}^{\circ} \text{s}^{\circ}$	Inc. Bor.	Dis. $\text{a}^{\circ} \text{Cur.}$
0	S 0 1 11	0 1 1'	Logarith.	S 0 1 11	0 1 1'	Logarith.
0	6. 4. 0. 2	2.27. 0	5.992335	7. 1.27.10	1.56.24	6.000575
1	6. 4.56.23	2.26.29	5.992680	7. 2.31.26	1.54.54	6.000767
2	6. 5.52.39	2.25.56	5.993021	7. 3.25.39	1.53.22	6.000951
3	6. 6.48.48	2.25.21	5.993357	7. 4.19.50	1.51.48	6.001131
4	6. 7.44.53	2.24.44	5.993688	7. 5.13.58	1.50.13	6.001304
5	6. 8.40.54	2.24. 4	5.994016	7. 6. 8. 4	1.48.36	6.001472
6	6. 9.36.48	2.23.22	5.994338	7. 7. 2. 7	1.46.57	6.001632
7	6.10.32.39	2.22.38	5.994656	7. 7.56. 7	1.45.17	6.001787
8	6.11.28.24	2.21.52	5.994970	7. 8.50. 6	1.43.36	6.001936
9	6.12.24. 4	2.21. 3	5.995278	7. 9.44. 3	1.41.53	6.002079
10	6.13.19.39	2.20.13	5.995582	7.10.37.57	1.40. 9	6.002216
11	6.14.15. 9	2.19.20	5.995882	7.11.31.49	1.38.23	6.002345
12	6.15.10.36	2.18.25	5.996177	7.12.25.40	1.36.36	6.002470
13	6.16. 5.58	2.17.28	5.996466	7.13.19.28	1.34.47	6.002588
14	6.17. 1.16	2.16.29	5.996751	7.14.13.14	1.32.58	6.002698
15	6.17.56.29	2.15.28	5.997031	7.15. 7. 0	1.31. 7	6.002803
16	6.18.51.38	2.14.25	5.997305	7.16. 0.44	1.29.14	6.002902
17	6.19.46.43	2.13.20	5.997574	7.16.54.26	1.27.20	6.002994
18	6.20.41.43	2.12.13	5.997838	7.17.48. 8	1.25.25	6.003081
19	6.21.36.40	2.11. 4	5.998096	7.18.41.48	1.23.29	6.003160
20	6.22.31.34	2. 9.53	5.998350	7.19.35.27	1.21.32	6.003234
21	6.23.26.23	2. 8.41	5.998598	7.20.29. 4	1.19.34	6.003301
22	6.24.21. 8	2. 7.26	5.998840	7.21.22.41	1.17.34	6.003360
23	6.25.15.50	2. 6.10	5.999076	7.22.16.17	1.15.33	6.003414
24	6.26.10.29	2. 4.51	5.999308	7.23. 9.52	1.13.31	6.003462
25	6.27. 5. 4	2. 3.31	5.999533	7.24. 3.26	1.11.29	6.003502
26	6.27.59.34	2. 2. 9	5.999753	7.24.57. 0	1. 9.25	6.003536
27	6.28.54. 3	2. 0.46	5.999968	7.25.50.33	1. 7.20	6.003565
28	6.29.48.28	1.59.20	6.000176	7.26.44. 7	1. 5.14	6.003585
29	7. 0.42.50	1.57.53	6.000379	7.27.37.40	1. 3. 7	6.003600
30	7. 1.37.10	1.56.24	6.000575	7.28.31.13	1. 1. 0	6.003608

J O V I S

Tabula Motus Medii ab Aphelio.

An. Chr. Current	Anomalía γ ° ' "	Annis.	Mot. Anom. ° ' "	Dies.	Mot. Anom. ° ' "	Motus Anom.	Motus Anom.
I	0.13.54.30	I	1. 0.19.44	I	0. 4.59	H.	H.
I ^o I	5.28.17. 0	2	2. 0.39.27	2	0. 9.58	" "	" "
1581	2.26.15. 0	3	3. 0.59.11	3	0.14.57	I	31 6.26
1501	II. 3.14.30	4	4. 1.23.54	4	0.19.57	2	32 6.39
1621	7.10.14. 0	5	5. 1.43.38	5	0.24.56	3	33 6.51
1641	3.17.13.30	6	6. 2. 3.21	6	0.29.55	4	34 7. 4
1661	11.24.13. 0	7	7. 2.23. 5	7	0.34.54	5	35 7.16
1681	8. 1.12.30	8	8. 2.47.48	8	0.39.53	6	36 7.29
1701	4. 8.12. 0	9	9. 3. 7.32	9	0.44.52	7	37 7.41
1721	0.15.11.30	10	10. 3.27.15	10	0.49.51	8	38 7.54
1741	8.22.11. 0	11	11. 3.46.59	11	0.54.50	9	39 8. 6
1761	4.29.10.30	12	12. 0. 4.11.42	12	0.59.50	10	40 8.19
1781	1. 6.10. 0	13	1. 4.31.26	13	1. 4.49	11	41 8.31
1801	9.13. 9.30	14	2. 4.51. 9	14	1. 9.48	12	42 8.43
1901	2.18. 7. 0	15	3. 5.10.53	15	1.14.47	13	43 8.56
2001	7.23. 4.30	16	4. 5.35.36	16	1.19.46	14	44 9. 8
An- nis.	Mot. Anom. ° ' "	17	5. 5.55.20	17	1.24.45	15	45 9.21
20	8. 6.59.30	18	6. 6.15. 3	18	1.29.44	16	46 9.33
40	4.13.59. 0	19	7. 6.34.47	19	1.34.44	17	47 9.45
60	0.20.58.30	20	8. 6.59.30	20	1.39.43	18	48 9.58
80	8.27.58. 0	Menf. A.Com	Mot. Anom. ° ' "	21	1.44.42	19	49 10.11
100	5. 4.57.30	Janua.	0. 0. 0	22	1.49.41	20	50 10.23
200	10. 9.55. 0	Febr.	2.34.33	23	1.54.40	21	51 10.36
300	3.14.52.30	Mart.	4.54. 9	24	1.59.39	22	52 10.48
400	8.19.50. 0	April.	7.28.42	25	2. 4.38	23	53 11. 1
500	1.24.47.30	Maij.	9.58.16	26	2. 9.37	24	54 11.13
600	6.29.45. 0	Junij.	12.32.49	27	2.14.37	25	55 11.26
700	0. 4.42.30	Julij.	15. 2.23	28	2.19.36	26	56 11.38
800	5. 9.40. 0	Aug.	17.36.56	29	2.24.35	27	57 11.50
900	10.14.37.30	Sept.	20.11.29	30	2.29.34	28	58 12. 3
1000	3.19.35. 0	Octo.	22.41. 3	31	2.34.33	29	59 12.15
2003	7. 9.10. 0	Nov.	25.15.37	32	2.39.32	30	60 12.28
3000	10.28.45. 0	Dec.	27.45.11				
4000	2.18.20. 0	In Anno Bistextili, post Februarium, adde u- num diem & unius diei motum.		Long. Aphelii γ à γ * γ . ——— 5. 9. 50. 0			
5000	6. 7.55. 0			Long. γ à γ * γ . ——— 2. 8. 0. 0			
6000	9.27.30. 0			Incl. Orb. γ ——— 1. 20. 0			
				Dist. med. γ à $\odot$ ——— 520110			
				Eccentricita. ——— 2505b			

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 0.			Sig. 1.		
	Long. ♄	Lat. ♄	Inc. Bor.	Long. ♄	Lat. ♄	Inc. Bor.
0	S	0	1	S	0	1
0	5. 9. 50. 2	1. 19. 58	5. 736406	6. 7. 13. 4	1. 9. 50	5. 783980
1	5. 10. 44. 36	1. 19. 55	5. 736403	6. 8. 8. 15	1. 9. 11	5. 733818
2	5. 11. 39. 10	1. 19. 51	5. 736395	6. 9. 3. 30	1. 8. 32	5. 733652
3	5. 12. 33. 44	1. 19. 45	5. 736381	6. 9. 58. 46	1. 7. 52	5. 733479
4	5. 13. 28. 18	1. 19. 38	5. 736362	6. 10. 54. 5	1. 7. 10	5. 733302
5	5. 14. 22. 53	1. 19. 30	5. 736338	6. 11. 49. 28	1. 6. 28	5. 733120
6	5. 15. 17. 28	1. 19. 21	5. 736308	6. 12. 44. 53	1. 5. 44	5. 732934
7	5. 16. 12. 4	1. 19. 11	5. 736273	6. 13. 40. 20	1. 5. 0	5. 732741
8	5. 17. 6. 40	1. 18. 59	5. 736231	6. 14. 35. 52	1. 4. 14	5. 732545
9	5. 18. 1. 17	1. 18. 47	5. 736185	6. 15. 31. 26	1. 3. 27	5. 732344
10	5. 18. 55. 55	1. 18. 33	5. 736134	6. 16. 27. 3	1. 2. 39	5. 732139
11	5. 19. 50. 32	1. 18. 18	5. 736076	6. 17. 22. 43	1. 1. 51	5. 731928
12	5. 20. 45. 11	1. 18. 2	5. 736014	6. 18. 18. 26	1. 1. 1	5. 731713
13	5. 21. 39. 52	1. 17. 44	5. 735947	6. 19. 14. 14	1. 0. 10	5. 731492
14	5. 22. 34. 33	1. 17. 26	5. 735873	6. 20. 10. 4	0. 59. 18	5. 731268
15	5. 23. 29. 15	1. 17. 6	5. 735795	6. 21. 5. 58	0. 58. 25	5. 731039
16	5. 24. 23. 59	1. 16. 45	5. 735710	6. 22. 1. 55	0. 57. 31	5. 730807
17	5. 25. 18. 44	1. 16. 23	5. 735621	6. 22. 57. 56	0. 56. 36	5. 730570
18	5. 26. 13. 30	1. 15. 59	5. 735526	6. 23. 54. 1	0. 55. 41	5. 730327
19	5. 27. 8. 18	1. 15. 35	5. 735426	6. 24. 50. 9	0. 54. 44	5. 730081
20	5. 28. 3. 8	1. 15. 9	5. 735321	6. 25. 46. 22	0. 53. 46	5. 729831
21	5. 28. 57. 59	1. 14. 42	5. 735210	6. 26. 42. 38	0. 52. 48	5. 729576
22	5. 29. 52. 52	1. 14. 14	5. 735094	6. 27. 38. 57	0. 51. 48	5. 729318
23	6. 0. 47. 46	1. 13. 45	5. 734973	6. 28. 35. 21	0. 50. 48	5. 729055
24	6. 1. 42. 43	1. 13. 15	5. 734846	6. 29. 31. 50	0. 49. 46	5. 728788
25	6. 2. 37. 40	1. 12. 44	5. 734714	7. 0. 28. 23	0. 48. 44	5. 728517
26	6. 3. 32. 41	1. 12. 11	5. 734577	7. 1. 25. 0	0. 47. 41	5. 728243
27	6. 4. 27. 43	1. 11. 37	5. 734436	7. 2. 21. 41	0. 46. 37	5. 727965
28	6. 5. 22. 47	1. 11. 2	5. 734289	7. 3. 18. 26	0. 45. 32	5. 727683
29	6. 6. 17. 55	1. 10. 27	5. 734137	7. 4. 15. 17	0. 44. 27	5. 727397
30	6. 7. 13. 4	1. 9. 50	5. 733980	7. 5. 12. 10	0. 43. 20	5. 727106

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 2.			Sig. 3.		
	Long. Ψ a γ	Inc. Bor.	Dif. a $\odot$ Cur.	Long. Ψ a γ	Inc. Bor.	Dif. a $\odot$ Cur.
0	S O ' "	O ' "	Logarith.	S O ' "	O ' "	Logarith.
0	7. 5. 12. 10	0. 43. 20	5.727106	8. 4. 19. 11	0. 5. 8	5.717101
1	7. 6. 9. 10	0. 42. 13	5.726813	8. 5. 18. 52	0. 3. 45	5.716738
2	7. 7. 6. 14	0. 41. 5	5.726517	8. 6. 18. 39	0. 2. 22	5.716374
3	7. 8. 3. 22	0. 39. 56	5.726216	8. 7. 18. 32	0. 0. 58	5.716009
4	7. 9. 0. 36	0. 38. 47	5.725912	8. 8. 18. 32	0. 0. 26	5.715644
5	7. 9. 57. 54	0. 37. 36	5.725607	8. 9. 18. 37	0. 1. 50	5.715278
6	7. 10. 55. 16	0. 36. 25	5.725297	8. 10. 18. 49	0. 3. 14	5.714911
7	7. 11. 52. 45	0. 35. 14	5.724983	8. 11. 19. 6	0. 4. 38	5.714545
8	7. 12. 50. 17	0. 34. 1	5.724667	8. 12. 19. 30	0. 6. 2	5.714177
9	7. 13. 47. 56	0. 32. 48	5.724348	8. 13. 20. 0	0. 7. 26	5.713809
10	7. 14. 45. 39	0. 31. 34	5.724026	8. 14. 20. 36	0. 8. 50	5.713443
11	7. 15. 43. 28	0. 30. 20	5.723700	8. 15. 21. 18	0. 10. 15	5.713076
12	7. 16. 41. 21	0. 29. 5	5.723372	8. 16. 22. 6	0. 11. 39	5.712710
13	7. 17. 39. 19	0. 27. 49	5.723043	8. 17. 23. 1	0. 13. 3	5.712342
14	7. 18. 37. 23	0. 26. 33	5.722709	8. 18. 24. 2	0. 14. 27	5.711976
15	7. 19. 35. 32	0. 25. 16	5.722373	8. 19. 25. 9	0. 15. 50	5.711611
16	7. 20. 33. 48	0. 23. 59	5.722035	8. 20. 26. 22	0. 17. 14	5.711248
17	7. 21. 32. 8	0. 22. 41	5.721696	8. 21. 27. 41	0. 18. 38	5.710884
18	7. 22. 30. 34	0. 21. 22	5.721354	8. 22. 29. 6	0. 20. 1	5.710521
19	7. 23. 29. 6	0. 20. 3	5.721009	8. 23. 30. 38	0. 21. 24	5.710159
20	7. 24. 27. 43	0. 18. 44	5.720662	8. 24. 32. 15	0. 22. 47	5.709798
21	7. 25. 26. 26	0. 17. 24	5.720312	8. 25. 34. 0	0. 24. 9	5.709439
22	7. 26. 25. 14	0. 16. 4	5.719962	8. 26. 35. 50	0. 25. 31	5.709081
23	7. 27. 24. 9	0. 14. 43	5.719610	8. 27. 37. 46	0. 26. 53	5.708725
24	7. 28. 23. 9	0. 13. 22	5.719256	8. 28. 39. 48	0. 28. 14	5.708371
25	7. 29. 22. 14	0. 12. 0	5.718900	8. 29. 41. 56	0. 29. 35	5.708018
26	8. 0. 21. 26	0. 10. 39	5.718543	9. 0. 44. 11	0. 30. 55	5.707667
27	8. 1. 20. 43	0. 9. 16	5.718184	9. 1. 46. 31	0. 32. 15	5.707319
28	8. 2. 20. 7	0. 7. 54	5.717825	9. 2. 48. 58	0. 33. 35	5.706972
29	8. 3. 19. 36	0. 6. 31	5.717463	9. 3. 51. 30	0. 34. 54	5.706629
30	8. 4. 19. 11	0. 5. 8	5.717101	9. 4. 54. 9	0. 36. 12	5.706287

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Tabula Loci Helio-centrici.

Atom red.	Sig. 4.			Sig. 5.		
	Long. γ à $1^{\circ} \gamma$	Inc. Aust.	Dis. à $\odot$ Cur.	Long. γ à $1^{\circ} \gamma$	Inc. Aust.	Dis. à $\odot$ Cur.
	S O I II	O I II	Logarith.	S O I II	O I II	Logarith.
0	9. 4.54. 9	0.36.12	5.706287	10. 6.54.58	1. 8.31	5.697786
1	9. 5.56.53	0.37.30	5.705948	10. 8. 0.12	1. 9.17	5.697580
2	9. 6.59.43	0.38.47	5.705611	10. 9. 5.28	1.10. 2	5.697380
3	9. 8. 2.39	0.40. 4	5.705278	10.10.10.49	1.10.45	5.697186
4	9. 9. 5.40	0.41.19	5.704948	10.11.16.13	1.11.27	5.696998
5	9.10. 8.48	0.42.34	5.704620	10.12.21.39	1.12. 8	5.696817
6	9.11.12. 1	0.43.49	5.704296	10.13.27.10	1.12.46	5.696643
7	9.12.15.19	0.45. 2	5.703975	10.14.32.44	1.13.24	5.696475
8	9.13.18.44	0.46.15	5.703658	10.15.38.19	1.13.59	5.696313
9	9.14.22.14	0.47.27	5.703344	10.16.43.59	1.14.33	5.696159
10	9.15.25.49	0.48.38	5.703034	10.17.49.41	1.15. 6	5.696010
11	9.16.29.30	0.49.48	5.702727	10.18.55.26	1.15.36	5.695869
12	9.17.33.16	0.50.57	5.702424	10.20. 1.13	1.16. 6	5.695734
13	9.18.37. 7	0.52. 5	5.702126	10.21. 7. 2	1.16.33	5.695606
14	9.19.41. 4	0.53.12	5.701832	10.22.12.53	1.16.59	5.695486
15	9.20.45. 6	0.54.19	5.701542	10.23.18.47	1.17.23	5.695372
16	9.21.49.13	0.55.24	5.701257	10.24.24.43	1.17.46	5.695266
17	9.22.53.24	0.56.28	5.700974	10.25.30.41	1.18. 6	5.695167
18	9.23.57.41	0.57.31	5.700698	10.26.36.41	1.18.26	5.695074
19	9.25. 2. 3	0.58.33	5.700427	10.27.42.42	1.18.43	5.694989
20	9.26. 6.29	0.59.33	5.700160	10.28.48.44	1.18.58	5.694911
21	9.27.11. 1	1. 0.33	5.699899	10.29.54.48	1.19.12	5.694842
22	9.28.15.37	1. 1.31	5.699642	11. 1. 0.53	1.19.24	5.694779
23	9.29.20.17	1. 2.28	5.699391	11. 2. 6.59	1.19.35	5.694723
24	10. 0.25. 2	1. 3.24	5.699145	11. 3.13. 6	1.19.43	5.694675
25	10. 1.29.52	1. 4.19	5.698904	11. 4.19.14	1.19.50	5.694634
26	10. 2.34.45	1. 5.12	5.698669	11. 5.25.23	1.19.55	5.694601
27	10. 3.39.41	1. 6. 4	5.698440	11. 6.31.33	1.19.58	5.694575
28	10. 4.44.44	1. 6.54	5.698216	11. 7.37.42	1.20. 0	5.694555
29	10. 5.49.49	1. 7.43	5.697999	11. 8.43.52	1.20. 0	5.694544
30	10. 6.54.58	1. 8.31	5.697786	11. 9.50. 2	1.19.58	5.694540

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 6.			Sig. 7.		
	Long. φ à γ	Inc. Aust.	D. f. à $\odot$ Cur.	Long. φ à γ	Inc. Aust.	D. f. à $\odot$ Cur.
0	S 0 1 11	0 1 11	Logarith.	S 0 1 11	0 1 11	Logarith.
0	II. 9.50. 2	I. 19.58	5.694540	0.12.45. 3	I. 5.44	5.697793
1	II. 10.56.12	I. 19.54	5.694545	0.13.50.12	I. 4.52	5.698006
2	II. 12. 2.22	I. 19.48	5.694556	0.14.55.18	I. 3.58	5.698223
3	II. 13. 8.31	I. 19.41	5.694576	0.16. 0.20	I. 3. 2	5.698447
4	II. 14.14.40	I. 19.32	5.694602	0.17. 5.16	I. 2. 6	5.698676
5	II. 15.20.49	I. 19 21	5.694635	0.18.10. 9	I. 1. 8	5.698911
6	II. 16.26.57	I. 19. 8	5.694677	0.19.14.59	I. 0. 9	5.699153
7	II. 17.33. 4	I. 18.53	5.694725	0.20.19.44	0.59. 9	5.699399
8	II. 18.39.10	I. 18.37	5.694781	0.21.24.24	0.58. 7	5.699650
9	II. 19.45.15	I. 18.19	5.694844	0.22.28.59	0.57. 5	5.699906
10	II. 20.51.19	I. 18. 0	5.694914	0.23.33.21	0.56. 1	5.700167
11	II. 21.57.21	I. 17.38	5.694992	0.24.37.57	0.54.56	5.700435
12	II. 23. 3.22	I. 17.15	5.695077	0.25.42.19	0.53.50	5.700706
13	II. 24. 9.22	I. 16.51	5.695171	0.26.46.36	0.52.44	5.700982
14	II. 25.15.20	I. 16.24	5.695270	0.27.50.46	0.51.36	5.701264
15	II. 26.21.15	I. 15.56	5.695376	0.28.54.52	0.50.27	5.701549
16	II. 27.27. 9	I. 15.26	5.695490	0.29.58.55	0.49.17	5.701839
17	II. 28.33. 0	I. 14.55	5.695611	I. 1. 2.52	0.48. 6	5.702133
18	II. 29.38.50	I. 14.22	5.695738	I. 2. 6.43	0.46.54	5.702432
19	0. 0.44.37	I. 13.47	5.695874	I. 3.10.29	0.45.41	5.702735
20	0. 1.50.22	I. 13.11	5.696016	I. 4.14.10	0.44.28	5.703041
21	0. 2.56. 3	I. 12.33	5.696164	I. 5.17.45	0.43.14	5.703351
22	0. 4. 1.43	I. 11.53	5.696319	I. 6.21.15	0.41.59	5.703665
23	0. 5. 7.18	I. 11.12	5.696481	I. 7.24.40	0.40.43	5.703982
24	0. 6.12.52	I. 10.30	5.696649	I. 8.27.58	0.39.26	5.704302
25	0. 7.18.23	I. 9.46	5.696824	I. 9.31.10	0.38. 9	5.704626
26	0. 8.23.49	I. 9. 0	5.697005	I. 10.34.17	0.36.51	5.704954
27	0. 9:29.13	I. 8.14	5.697192	I. 11.37.19	0.35.33	5.705284
28	0.10.34.33	I. 7.25	5.697386	I. 12.40.14	0.34.14	5.705617
29	0.11.39.50	I. 6.35	5.697587	I. 13.43. 5	0.32.54	5.705954
30	0.12.45. 3	I. 5.44	5.697793	I. 14.45.49	0.31.34	5.706293

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Tabula Loci Heliocentrici.

Anom med	Sig. 8.			Sig. 9.		
	Long ψ à γ	Inc. Au.	Dif. à $\odot$ Cur.	Long ψ à γ	Inc. Bor.	Dif. à $\odot$ Cur.
	S O I "	O I "	Logarith.	S O I "	O I "	Logarith.
0	1.14.45.49	0.31.34	5.706293	2.15.20.46	0.10.14	5.717099
1	1.15.48.28	0.30.13	5.706634	2.16.20.21	0.11.36	5.717462
2	1.16.51.0	0.28.52	5.706978	2.17.19.50	0.12.58	5.717823
3	1.17.53.26	0.27.31	5.707324	2.18.19.14	0.14.20	5.718182
4	1.18.55.46	0.26.9	5.707672	2.19.18.31	0.15.41	5.718540
5	1.19.58.0	0.24.46	5.708023	2.20.17.44	0.17.2	5.718898
6	1.21.0.9	0.23.23	5.708376	2.21.16.49	0.18.23	5.719253
7	1.22.2.11	0.22.0	5.708729	2.22.15.49	0.19.43	5.719607
8	1.23.4.7	0.20.37	5.709085	2.23.14.43	0.21.2	5.719959
9	1.24.5.57	0.19.13	5.709443	2.24.13.31	0.22.21	5.720309
10	1.25.7.41	0.17.49	5.709802	2.25.12.14	0.23.40	5.720658
11	1.26.9.18	0.16.25	5.710162	2.26.10.52	0.24.58	5.721005
12	1.27.10.51	0.15.1	5.710524	2.27.9.23	0.26.15	5.721349
13	1.28.12.16	0.13.37	5.710887	2.28.7.49	0.27.32	5.721691
14	1.29.13.35	0.12.12	5.711250	2.29.6.9	0.28.48	5.722031
15	2.0.14.48	0.10.48	5.711614	3.0.4.24	0.30.4	5.722368
16	2.1.15.55	0.9.23	5.711978	3.1.2.34	0.31.19	5.722704
17	2.2.16.56	0.7.58	5.712344	3.2.0.38	0.32.33	5.723038
18	2.3.17.51	0.6.34	5.712711	3.2.58.37	0.33.47	5.723367
19	2.4.18.39	0.5.9	5.713078	3.3.56.20	0.35.0	5.723694
20	2.5.19.21	0.3.44	5.713444	3.4.54.19	0.36.12	5.724020
21	2.6.19.57	0.2.20	5.713810	3.5.52.2	0.37.24	5.724342
22	2.7.20.27	0.0.55	5.714178	3.6.49.40	0.38.35	5.724661
23	2.8.20.51	Bor 0.29	5.714545	3.7.47.13	0.39.45	5.724977
24	2.9.21.8	0.1.53	5.714911	3.8.44.41	0.40.54	5.725290
25	2.10.21.20	0.3.17	5.715278	3.9.42.4	0.42.3	5.725601
26	2.11.21.25	0.4.41	5.715644	3.10.39.23	0.43.10	5.725906
27	2.12.21.25	0.6.5	5.716008	3.11.36.36	0.44.17	5.726209
28	2.13.21.18	0.7.28	5.716373	3.12.33.45	0.45.23	5.726510
29	2.14.21.5	0.8.51	5.716737	3.13.30.49	0.46.29	5.726806
30	2.15.20.46	0.10.14	5.717099	3.14.27.49	0.47.33	5.727099

J O V I S

Tabula Loci Heliocentrici.

Anom. med.	Sig. IO.			Sig. II.		
	Long. φ à $\star \gamma$	Inc. Bor.	Dif. à $\odot$ Cur.	Long. φ à $\star \gamma$	Inc. Bor.	Dif. à $\odot$ Cur.
	S O ' "	O ' "	Logarith.	S O ' "	O ' "	Logarith.
0	3.14.27.49	0.47.33	5.727099	4.12.26.58	1.12.11	5.733974
1	3.15.24.42	0.48.37	5.727390	4.13.22.7	1.12.43	5.734131
2	3.16.21.33	0.49.39	5.727676	4.14.17.14	1.13.15	5.734283
3	3.17.18.18	0.50.41	5.727958	4.15.12.19	1.13.45	5.734430
4	3.18.15.0	0.51.42	5.728236	4.16.7.21	1.14.14	5.734572
5	3.19.11.36	0.52.42	5.728510	4.17.2.22	1.14.42	5.734708
6	3.20.8.9	0.53.41	5.728781	4.17.57.20	1.15.9	5.734841
7	3.21.4.38	0.54.39	5.729047	4.18.52.17	1.15.35	5.734968
8	3.22.1.2	0.55.36	5.729310	4.19.47.12	1.16.0	5.735089
9	3.22.57.22	0.56.32	5.729568	4.20.42.4	1.16.23	5.735206
10	3.23.53.38	0.57.27	5.729823	4.21.36.55	1.16.45	5.735317
11	3.24.49.51	0.58.21	5.730073	4.22.31.45	1.17.6	5.735422
12	3.25.45.59	0.59.14	5.730320	4.23.26.32	1.17.26	5.735522
13	3.26.42.4	1.0.6	5.730563	4.24.21.19	1.17.45	5.735617
14	3.27.38.6	1.0.58	5.730800	4.25.16.4	1.18.2	5.735706
15	3.28.34.3	1.1.48	5.731032	4.26.10.48	1.18.18	5.735791
16	3.29.29.57	1.2.37	5.731261	4.27.5.30	1.18.33	5.735870
17	4.0.25.47	1.3.25	5.731485	4.28.0.11	1.18.47	5.735944
18	4.1.21.34	1.4.12	5.731705	4.28.54.52	1.19.0	5.736011
19	4.2.17.18	1.4.58	5.731920	4.29.49.31	1.19.11	5.736074
20	4.3.12.58	1.5.43	5.732132	5.0.44.9	1.19.21	5.736131
21	4.4.8.35	1.6.26	5.732337	5.1.38.47	1.19.31	5.736183
22	4.5.4.10	1.7.9	5.732538	5.2.33.24	1.19.38	5.736229
23	4.5.59.41	1.7.51	5.732734	5.3.28.0	1.19.45	5.736271
24	4.6.55.8	1.8.31	5.732927	5.4.22.35	1.19.50	5.736307
25	4.7.50.34	1.9.11	5.733113	5.5.17.10	1.19.55	5.736337
26	4.8.45.56	1.9.49	5.733295	5.6.11.45	1.19.58	5.736361
27	4.9.41.16	1.10.26	5.733473	5.7.6.20	1.19.59	5.736380
28	4.10.36.33	1.11.2	5.733645	5.8.0.54	1.20.0	5.736394
29	4.11.31.47	1.11.37	5.733812	5.8.55.28	1.19.59	5.736402
30	4.12.26.58	1.12.11	5.733974	5.9.50.2	1.19.58	5.736406

Tabula Motus Medij ab Aphelio.

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MARTIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. 0.			Sig. I.		
	Long. à 1 * V	Inc. Bor.	Dif. à ☉ Cur.	Long. à 1 * V	Inc. Bor.	Dif. à ☉ Cur.
	S O ' "	O ' "	Logarith.	S O ' "	O ' "	Logarith.
0	4. 1.12.22	1.49.32	5.221113	4.26.23.59	1.29.11	5.216997
1	4. 2. 2.27	1.49.11	5.221110	4.27.15. 2	1.28.10	5.216719
2	4. 2.52.32	1.48.49	5.221098	4.28. 6. 9	1.27. 8	5.216433
3	4. 3.42.37	1.48.25	5.221076	4.28.57.20	1.26. 4	5.216137
4	4. 4.32.42	1.48. 0	5.221044	4.29.48.34	1.25. 0	5.215832
5	4. 5.22.47	1.47.33	5.221003	5. 0.39.54	1.23.54	5.215519
6	4. 6.12.53	1.47. 5	5.220953	5. 1.31.18	1.22.47	5.215197
7	4. 7. 3. 1	1.46.36	5.220894	5. 2.22.47	1.21.39	5.214866
8	4. 7.53. 8	1.46. 5	5.220826	5. 3.14.20	1.20.29	5.214527
9	4. 8.43.17	1.45.33	5.220748	5. 4. 5.58	1.19.18	5.214179
10	4. 9.33.27	1.44.59	5.220661	5. 4.57.41	1.18. 6	5.213823
11	4.10.23.38	1.44.24	5.220565	5. 5.49.29	1.16.53	5.213458
12	4.11.13.51	1.43.48	5.220460	5. 6.41.22	1.15.39	5.213084
13	4.12. 4. 6	1.43.11	5.220345	5. 7.33.21	1.14.24	5.212702
14	4.12.54.22	1.42.32	5.220221	5. 8.25.26	1.13. 7	5.212312
15	4.13.44.39	1.41.52	5.220088	5. 9.17.36	1.11.49	5.211914
16	4.14.34.58	1.41.10	5.219946	5.10. 9.52	1.10.30	5.211507
17	4.15.25.19	1.40.27	5.219795	5.11. 2.13	1. 9.10	5.211092
18	4.16.15.43	1.39.43	5.219634	5.11.54.41	1. 7.49	5.210668
19	4.17. 6. 8	1.38.57	5.219464	5.12.47.15	1. 6.27	5.210237
20	4.17.56.37	1.38.11	5.219285	5.13.39.55	1. 5. 3	5.209798
21	4.18.47. 8	1.37.22	5.219097	5.14.32.42	1. 3.39	5.209351
22	4.19.37.40	1.36.33	5.218900	5.15.25.35	1. 2.13	5.208896
23	4.20.28.17	1.35.42	5.218694	5.16.18.35	1. 0.47	5.208433
24	4.21.18.56	1.34.50	5.218478	5.17.11.41	0.59.19	5.207962
25	4.22. 9.38	1.33.57	5.218254	5.18. 4.55	0.57.50	5.207484
26	4.23. 0.24	1.33. 2	5.218020	5.18.58.15	0.56.21	5.206998
27	4.23.51.12	1.32. 6	5.217777	5.19.51.43	0.54.50	5.206504
28	4.24.42. 4	1.31. 9	5.217526	5.20.45.19	0.53.18	5.206003
29	4.25.32.59	1.30.11	5.217267	5.21.39. 2	0.51.45	5.205495
30	4.26.23.59	1.29.11	5.216997	5.22.32.53	0.50.12	5.204979

MARTIS

Tabula Loci Helio-centrici.

Anom. med.	Sig. 2.			Sig. 3.		
	Long. à 1°	Inc. Bor.	Dif. à 0 Cur.	Long. à 1°	Inc. Auf.	Dif. à 0 Cur.
0	S 0 1 "	0 1 "	Logarith.	S 0 1 "	0 1 "	Logarith.
0	5.22.32.53	0.50.12	5.204979	6.20.37.31	0.2.51	5.186600
1	5.23.26.51	0.48.37	5.204456	6.21.36.18	0.4.46	5.185911
2	5.24.20.57	0.47.1	5.203925	6.22.35.17	0.6.41	5.185219
3	5.25.15.12	0.45.25	5.203388	6.23.34.27	0.8.37	5.184525
4	5.26.9.34	0.43.47	5.202844	6.24.33.48	0.10.32	5.183827
5	5.27.4.4	0.42.9	5.202292	6.25.32.21	0.12.28	5.183127
6	5.27.58.42	0.40.30	5.201734	6.26.33.7	0.14.24	5.182424
7	5.28.53.29	0.38.49	5.201169	6.27.33.3	0.16.20	5.181719
8	5.29.48.25	0.37.8	5.200598	6.28.32.12	0.18.16	5.181012
9	6.0.43.30	0.35.26	5.200020	6.29.32.32	0.20.13	5.180302
10	6.1.38.44	0.33.44	5.199436	7.0.34.5	0.22.9	5.179592
11	6.2.34.7	0.32.0	5.198846	7.1.34.49	0.24.5	5.178880
12	6.3.29.39	0.30.16	5.198249	7.2.35.45	0.26.1	5.178167
13	6.4.25.21	0.28.31	5.197646	7.3.36.55	0.27.57	5.177452
14	6.5.21.12	0.26.45	5.197038	7.4.38.15	0.29.53	5.176737
15	6.6.17.11	0.24.58	5.196424	7.5.39.48	0.31.49	5.176021
16	6.7.13.21	0.23.11	5.195804	7.6.41.34	0.33.44	5.175305
17	6.8.9.41	0.21.23	5.195178	7.7.43.31	0.35.39	5.174589
18	6.9.6.10	0.19.35	5.194546	7.8.45.41	0.37.34	5.173872
19	6.10.2.49	0.17.45	5.193909	7.9.48.3	0.39.29	5.173156
20	6.10.59.38	0.15.56	5.193267	7.10.50.38	0.41.23	5.172442
21	6.11.56.38	0.14.5	5.192620	7.11.53.25	0.43.17	5.171728
22	6.12.53.48	0.12.14	5.191969	7.12.56.24	0.45.10	5.171015
23	6.13.51.9	0.10.23	5.191313	7.13.59.37	0.47.2	5.170304
24	6.14.48.39	0.8.31	5.190652	7.15.3.2	0.48.54	5.169594
25	6.15.46.21	0.6.38	5.189987	7.16.6.39	0.50.46	5.168886
26	6.16.44.13	0.4.45	5.189318	7.17.10.29	0.52.37	5.168180
27	6.17.42.16	0.2.52	5.188644	7.18.14.31	0.54.27	5.167478
28	6.18.40.29	0.0.58	5.187966	7.19.18.46	0.56.16	5.166777
29	6.19.38.54	0.0.57	5.187285	7.20.23.13	0.58.4	5.166079
30	6.20.37.31	0.2.51	5.186600	7.21.27.53	0.59.52	5.165385

MARTIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. 4.			Sig. 5.		
	Long. à 1 * V	Inc. An.	Dif. à ☉ Cur.	Long. à 1 * V	Inc. Anst.	Dif. à ☉ Cur.
	S O I II	O I II	Logarith.	S O I II	O I II	Logarith.
0	7.21.27.53	0.59.52	5.165385	8.25.18 17	1.42.26	5.147570
1	7.22.32.44	1. 1.38	5.164695	8.26.28.39	1.43.20	5.147125
2	7.23.37.49	1. 3.24	5.164008	8.27.39. 9	1.44.12	5.146692
3	7.24.43. 5	1. 5. 8	5.163326	8.28.49.48	1.45. 1	5.146273
4	7.25.48.34	1. 6.52	5.162648	9. 0. 0.34	1.45.48	5.145866
5	7.26.54.16	1. 8.34	5.161976	9. 1.11.27	1.46.32	5.145472
6	7.28. 0. 9	1.10.15	5.161308	9. 2.22.29	1.47.14	5.145093
7	7.29. 6.15	1.11.55	5.160645	9. 3.33.37	1.47.52	5.144727
8	8. 0.12.33	1.13.33	5.159988	9. 4.44.53	1.48.28	5.144375
9	8. 1.19. 3	1.15.11	5.159337	9. 5.56.16	1.49. 2	5.144037
10	8. 2.25.44	1.16.46	5.158692	9. 7. 7.44	1.49.32	5.143713
11	8. 3.32.37	1.18.21	5.158054	9. 8.19.19	1.50. 0	5.143405
12	8. 4.39.43	1.19.53	5.157423	9. 9.31. 0	1.50.25	5.143110
13	8. 5.47. 0	1.21.25	5.156798	9.10.42.46	1.50.47	5.142831
14	8. 6.54.29	1.22.54	5.156182	9.11.54.38	1.51. 6	5.142567
15	8. 8. 2. 8	1.24.22	5.155573	9.13. 6.35	1.51.23	5.142318
16	8. 9. 9.59	1.25.49	5.154972	9.14.18.36	1.51.36	5.142085
17	8.10.18. 1	1.27.13	5.154379	9.15.30.43	1.51.46	5.141867
18	8.11.26.15	1.28.36	5.153795	9.16.42.53	1.51.54	5.141666
19	8.12.34.39	1.29.56	5.153220	9.17.55. 7	1.51.58	5.141480
20	8.13.43.14	1.31.15	5.152655	9.19. 7.25	1.52. 0	5.141309
21	8.14.51.59	1.32.32	5.152099	9.20.19.45	1.51.58	5.141156
22	8.16. 0.55	1.33.47	5.151553	9.21.32. 9	1.51.54	5.141018
23	8.17.10. 2	1.35. 0	5.151017	9.22.44.35	1.51.47	5.140896
24	8.18.19.18	1.36.10	5.150491	9.23.57. 4	1.51.37	5.140791
25	8.19.28.44	1.37.18	5.149976	9.25. 9.34	1.51.23	5.140702
26	8.20.38.20	1.38.25	5.149472	9.26.22. 6	1.51. 7	5.140629
27	8.21.48. 6	1.39.28	5.148979	9.27.34.39	1.50.48	5.140572
28	8.22.58. 1	1.40.30	5.148497	9.28.47.13	1.50.26	5.140533
29	8.24. 8. 4	1.41.29	5.148028	9.29.57.47	1.50. 0	5.140511
30	8.25.18.17	1.42.26	5.147570	10. 1.12.22	1.49.32	5.140505

MARTIS

Tabula Loci Heliocentrici.

Anom med.	Sig. 6.			Sig. 7.		
	Long. à 1 * γ	Inc. Aust.	Dis. à ☉ Cur.	Long. à 1 * γ	Inc. Aust.	Dis. à ☉ Cur.
0	S 0 1 "	0 1 "	Logarith.	S 0 1 "	0 1 "	Logarith.
0	10. 1.12.22	1.49.32	5.140505	11. 7. 5.56	1.15. 3	5.147659
1	10. 2.24.57	1.49. 1	5.140515	11. 8.16. 8	1.13.21	5.148118
2	10. 3.37.31	1.48.27	5.140541	11. 9.26.10	1.11.36	5.148589
3	10. 4.50. 5	1.47.50	5.140584	11.10.36. 4	1. 9.50	5.149071
4	10. 6. 2.38	1.47.11	5.140645	11.11.45.47	1. 8. 3	5.149564
5	10. 7.15.10	1.46.28	5.140722	11.12.55.21	1. 6.14	5.150069
6	10. 8.27.40	1.45.43	5.140815	11.14. 4.46	1. 4.24	5.150585
7	10. 9.40. 8	1.44.55	5.140924	11.15.14. 0	1. 2.32	5.151111
8	10.10.52.34	1.44. 4	5.141049	11.16.23. 5	1. 0.39	5.151647
9	10.12. 4.57	1.43.10	5.141190	11.17.31.59	0.58.45	5.152193
10	10.13.17.26	1.42.14	5.141348	11.18.40.42	0.56.50	5.152749
11	19.14.29.33	1.41.15	5.141522	11.19.49.15	0.54.54	5.153314
12	10.15.41.46	1.40.13	5.141711	11.20.57.37	0.52.57	5.153888
13	10.16.53.55	1.39. 9	5.141916	11.22. 5.49	0.50.59	5.154471
14	10.18. 6. 0	1.38. 2	5.142137	11.23.13.50	0.49. 0	5.155063
15	10.19.18. 0	1.36.52	5.142374	11.24.21.40	0.47. 0	5.155663
16	10.20.29.56	1.35.41	5.142626	11.25.29.18	0.45. 0	5.156271
17	10.21.41.48	1.34.26	5.142893	11.26.36.44	0.42.58	5.156886
18	10.22.53.33	1.33.10	5.143174	11.27.43.59	0.40.56	5.157509
19	10.24. 5.13	1.31.51	5.143471	11.28.51. 3	0.38.54	5.158139
20	10.25.16.46	1.30.29	5.143783	11.29.57.54	0.36.51	5.158776
21	10.26.28.13	1.29. 6	5.144109	0. 1. 4.35	0.34.47	5.159419
22	10.27.39.34	1.27.40	5.144449	0. 2.11. 3	0.32.43	5.160068
23	10.28.50.49	1.26.13	5.144804	0. 3.17.20	0.30.39	5.160723
24	11. 0. 1.55	1.24.43	5.145172	0. 4.23.24	0.28.35	5.161383
25	11. 1.12.55	1.23.11	5.145554	0. 5.29.16	0.26.30	5.162049
26	11. 2.23.48	1.21.37	5.145950	0. 6.34.56	0.24.25	5.162719
27	11. 3.34.32	1.20. 1	5.146358	0. 7.40.24	0.22.19	5.163395
28	11. 4.45. 9	1.18.24	5.146779	0. 8.45.40	0.20.14	5.164075
29	11. 5.55.37	1.16.44	5.147213	0. 9.50.44	0.18. 9	5.164759
30	11. 7. 5.56	1.15. 3	5.147659	0.10.55.34	0.16. 4	5.165446

MARTIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. 8.			Sig. 9.		
	Long. à α $\star \gamma$	Inc. Aust.	Dis. à $\odot$ Cur.	Long. à α $\star \gamma$	Inc. Bor.	Dis. à $\odot$ Cur.
	S O I II	O I II	Logarith.	S O I II	O I II	Logarith.
0	0.10.55.34	0.16. 4	5.165446	1.11.45.47	0.43. 3	5.186566
1	0.12. 0.13	0.13.58	5.166137	1.12.44.24	0.44.48	5.187248
2	0.13. 4.39	0.11.53	5.166832	1.13.42.50	0.46.33	5.187926
3	0.14. 8.53	0. 9.48	5.167530	1.14.41. 4	0.48.16	5.188601
4	0.15.12.54	0. 7.43	5.168230	1.15.39. 9	0.49.58	5.189272
5	0.16.16.43	0. 5.39	5.168932	1.16.37. 2	0.51.39	5.189939
6	0.17.20.19	0. 3.35	5.169638	1.17.34.45	0.53.18	5.190601
7	0.18.23.43	0. 1.31	5.170345	1.18.32.16	0.54.57	5.191260
8	0.19.26.54	Bor. 0.33	5.171053	1.19.29.37	0.56.34	5.191913
9	0.20.29.53	0. 2.36	5.171762	1.20.26.48	0.58.10	5.192562
10	0.21.32.40	0. 4.39	5.172473	1.21.23.48	0.59.45	5.193206
11	0.22.35.14	0. 6.41	5.173184	1.22.20.38	1. 1.18	5.193846
12	0.23.37.36	0. 8.43	5.173897	1.23.17.18	1. 2.51	5.194480
13	0.24.39.45	0.10.44	5.174610	1.24.13.48	1. 4.21	5.195110
14	0.25.41.42	0.12.44	5.175323	1.25.10. 9	1. 5.51	5.195733
15	0.26.43.27	0.14.44	5.176036	1.26. 6.20	1. 7.19	5.196351
16	0.27.45. 1	0.16.43	5.176748	1.27. 2.21	1. 8.46	5.196964
17	0.28.46.21	0.18.42	5.177460	1.27.58.12	1.10.12	5.197570
18	0.29.47.30	0.20.39	5.178171	1.28.53.55	1.11.36	5.198172
19	1. 0.48.26	0.22.36	5.178882	1.29.49.29	1.12.59	5.198767
20	1. 1.49.11	0.24.32	5.179590	2. 0.44.53	1.14.21	5.199355
21	1. 2.49.43	0.26.28	5.180297	2. 1.40. 7	1.15.41	5.199938
22	1. 3.50. 3	0.28.22	5.181003	2. 2.35.13	1.17. 0	5.200514
23	1. 4.50.12	0.30.16	5.181707	2. 3.30.11	1.18.17	5.201084
24	1. 5.50. 9	0.32. 8	5.182409	2. 4.24.59	1.19.33	5.201648
25	1. 6.49.55	0.34. 0	5.183109	2. 5.19.39	1.20.48	5.202205
26	1. 7.49.28	0.35.51	5.183806	2. 6.14.11	1.22. 1	5.202755
27	1. 8.48.50	0.37.40	5.184500	2. 7. 8.35	1.23.13	5.203299
28	1. 9.48. 1	0.39.29	5.185191	2. 8. 2.51	1.24.23	5.203835
29	1.10.47. 0	0.41.16	5.185880	2. 8.56.58	1.25.32	5.204365
30	1.11.45.47	0.43. 3	5.186566	2. 9.50.57	1.26.40	5.204887

MARTIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. IO.			Sig. II.		
	Long. à 1°	Inc. Bor.	Dif. à 0 Cur.	Long. à 1°	Inc. Bor.	Dif. à 0 Cur.
	S O 1 11	O 1 11	Logarith.	S O 1 11	O 1 11	Logarith.
0	2. 9.50.57	1.26.40	5.204887	3. 6. 0.30	1.49. 4	5.216925
1	2.10.44.49	1.27.46	5.205402	3. 6.51.30	1.49.26	5.217196
2	2.11.38.33	1.28.50	5.205910	3. 7.42.27	1.49.46	5.217458
3	2.12.32.10	1.29.53	5.206411	3. 8.33.19	1.50. 5	5.217710
4	2.13.25.40	1.30.55	5.206904	3. 9.24. 8	1.50.23	5.217955
5	2.14.19. 2	1.31.55	5.207390	3.10.14.55	1.50.39	5.218191
6	2.15.12.17	1.32.54	5.207868	3.11. 5.37	1.50.53	5.218417
7	2.16. 5.25	1.33.52	5.208339	3.11.56.17	1.51. 7	5.218635
8	2.16.58.27	1.34.47	5.208802	3.12.46.54	1.51.18	5.218843
9	2.17.51.21	1.35.42	5.209257	3.13.37.28	1.51.29	5.219042
10	2.18.44. 9	1.36.35	5.209705	3.14.28. 0	1.51.37	5.219233
11	2.19.36.50	1.37.26	5.210144	3.15.18.29	1.51.45	5.219415
12	2.20.29.26	1.38.16	5.210576	3.16. 8.55	1.51.51	5.219587
13	2.21.21.55	1.39. 5	5.211000	3.16.59.19	1.51.55	5.219750
14	2.22.14.18	1.39.52	5.211415	3.17.49.41	1.51.58	5.219904
15	2.23. 6.35	1.40.37	5.211823	3.18.40. 2	1.52. 0	5.220048
16	2.23.58.46	1.41.21	5.212222	3.19.30.20	1.52. 0	5.220184
17	2.24.50.52	1.42. 4	5.212613	3.20.20.36	1.51.59	5.220311
18	2.25.42.52	1.42.45	5.212995	3.21.10.51	1.51.56	5.220428
19	2.26.34.47	1.43.25	5.213369	3.22. 1. 4	1.51.52	5.220536
20	2.27.26.37	1.44. 3	5.213736	3.22.51.15	1.51.46	5.220634
21	2.28.18.21	1.44.40	5.214094	3.23.41.26	1.51.39	5.220724
22	2.29.10. 0	1.45.15	5.214443	3.24.31.36	1.51.31	5.220804
23	3. 0. 1.35	1.45.49	5.214783	3.25.21.43	1.51.21	5.220875
24	3. 0.53. 4	1.46.21	5.215115	3.26.11.51	1.51.10	5.220937
25	3. 1.44.29	1.46.52	5.215438	3.27. 1.57	1.50.57	5.220990
26	3. 2.35.50	1.47.21	5.215753	3.27.52. 3	1.50.43	5.221033
27	3. 3.27. 6	1.47.49	5.216059	3.28.42. 8	1.50.27	5.221067
28	3. 4.18.18	1.48.15	5.216357	3.29.32.14	1.50.10	5.221092
29	3. 5. 9.26	1.48.40	5.216645	4. 0.22.18	1.49.52	5.221107
30	3. 6. 0.30	1.49. 4	5.216925	4. 1.12.22	1.49.32	5.221113

VENERIS

Tabula Motus Medii ab Aphelio.

An.Chr. Current	Anomalia $\odot$ s o ' "	Annis.	Mot. Anom. s o ' "	$\odot$ p	Mot. Anom. s o ' "	Motus Anom.	Motus Anom.
I	4. 3.48.55	I	7.14.46.38	I	0. 1.36. 8	H. 0 ' "	H. 0 ' "
1501	7. 0.22.40	2	2.29.33.16	2	0. 3.12.15	1 ' " "	1 ' " "
1581	7.14.35.40	3	10.14.19.54	3	0. 4.48.23	1 0. 4. 0	31 2. 4.10
1601	1.18. 8.55	4	6. 0.42.39	4	0. 6.24.31	2 0. 8. 1	32 2. 8.10
1621	7.21.42.10	5	1.15.29.17	5	0 8. 0.38	3 0.12. 1	33 2.12.11
1641	1.25.15.25	6	9. 0.15.55	6	0. 9.36.46	4 0.14. 1	34 2.16.11
1661	7.28.48.40	7	4.15. 2.33	7	0.11.12.54	5 0.20. 2	35 2.20.11
1681	2. 2.21.55	8	0. 1.25.18	8	0.12.49. 1	6 0.24. 2	36 2.24.11
1701	8. 5.55.10	9	7.16.11.56	9	0.14.25. 9	7 0.28. 2	37 2.28.12
1721	2. 9.28.25	10	3. 0.58.34	10	0.16. 1.17	8 0.32. 3	38 2.32.12
1741	8.13. 1.40	11	10.15.45.12	11	0.17.37.24	9 0.36. 3	39 2.36.12
1761	2.16.34.35	12	6. 2. 7.57	12	0.19.13.32	10 0.40. 3	40 2.40.13
1781	8.20. 8.10	13	1.16.54.35	13	0.20.49.40	11 0.44. 4	41 2.44.13
1801	2.23.41.25	14	9. 1.41.13	14	0.22.25.47	12 0.48. 4	42 2.48.13
1901	9.11.27.40	15	4.16.27.51	15	0.24. 1.55	13 0.52. 4	43 2.52.14
2001	3.29.13.55	16	0. 2.50.36	16	0.25.38. 3	14 0.56. 4	44 2.56.14
An- pis.	Mot. Anom. s o ' "	17	7.17.37.14	17	0.27.14.10	15 1. 0. 5	45 3. 0.14
20	6. 3.33.15	18	3. 2.23.52	18	0.28.50.18	16 1. 4. 5	46 3. 4.14
40	0. 7. 6.30	19	10.17.10.30	19	1. 0.26.26	17 1. 8. 5	47 3. 8.15
60	6.10.39.45	20	6. 3.33.15	20	1. 2. 2.33	18 1.12. 6	48 3.12.15
80	0.14.13. 0	Menf.	Mot. Anom. s o ' "	21	1. 3.38.41	19 1.16. 6	49 3.16.16
100	6.17.46.15	A.Com		22	1. 5.14.49	20 1.20. 6	50 3.20.16
200	1. 5.32.30	Janua.	0. 0. 0. 0	23	1. 6.50.56	21 1.24. 7	51 3.24.16
300	7.23.18.45	Febr.	1.19.39.58	24	1. 8.27. 4	22 1.28. 7	52 3.28.17
400	2.11. 5. 0	Mart.	3. 4.31.32	25	1.10. 3.12	23 1.32. 7	53 3.32.17
500	8.28.51.15	April.	4.24.11.30	26	1.11.39.19	24 1.36. 8	54 3.36.17
600	3.16.37.30	Maij.	6.12.15.20	27	1.13.15.27	25 1.40. 8	55 3.40.18
700	10. 4.23.45	Junij.	8. 1.55.17	28	1.14.51.35	26 1.44. 8	56 3.44.18
800	4.22.10. 0	Julij.	9.19.59. 7	29	1.16.27.42	27 1.48. 9	57 3.48.18
900	11. 9.56.15	Aug.	11. 9.39. 5	30	1.18. 3.50	28 1.52. 9	58 3.52.19
1000	5.27.42.30	Sept.	0.29.19. 3	31	1.19.39.58	29 1.56. 9	59 3.56.19
2005	11.25.25. 0	Octo.	2.17.22.53	32	1.21.16. 5	30 2. 0.10	60 4. 0.19
3000	5.23. 7.30	Nove.	4. 7. 2.50				
4000	11.20.50. 0	Decr.	5.25. 6.40				
5000	5.18.32.30	In Anno Bifextili, post Februarium, adde u- num diem & unius diei motum.					
6000	11.16.15. 0						
				Long. Aphelli $\odot$ à γ . ——— 9. 5. 0. 0			
				Long. $\odot$ à γ . ——— 1. 15. 16. 0			
				Incl. Orb. $\odot$ ——— 3. 24. 0			
				Diff. med. $\odot$ à $\odot$ ——— 72333			
				Eccentricitat. ——— 517			

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Tabula Loci Heliocentrici.

Anom. med	Sig. 0.			Sig. I.		
	Long. ♀ à I * γ	Inc. Aufst.	Dis. à ☉ Cur.	Long. ♀ à I * γ	Inc. Aufst.	Dis. à ☉ Cur.
0	S 0 1 "	0 1 "	Logarith.	S 0 1 "	0 1 "	Logarith.
0	9. 4.57. 1	2.35.37	4.861985	10. 4.34.31	3.20.28	4.861284
1	9. 5.56.11	2.37.52	4.861971	10. 5.33.53	3.21. 5	4.861253
2	9. 6.55.21	2.40. 4	4.861957	10. 6.33.15	3.21.39	4.861221
3	9. 7.54.32	2.42.13	4.861941	10. 7.32.38	3.22. 9	4.861189
4	9. 8.53.42	2.44.20	4.861926	10. 8.32. 1	3.22.36	4.861155
5	9. 9.52.53	2.46.23	4.861909	10. 9.31.25	3.22.59	4.861122
6	9.10.52. 5	2.48.23	4.861892	10.10.30.49	3.23.18	4.861088
7	9.11.51.17	2.50.21	4.861874	10.11.30.14	3.23.34	4.861055
8	9.12.50.29	2.52.15	4.861854	10.12.29.40	3.23.46	4.861021
9	9.13.49.42	2.54. 6	4.861834	10.13.29. 6	3.23.54	4.860987
10	9.14.48.55	2.55.55	4.861814	10.14.28.33	3.23.59	4.860952
11	9.15.48. 7	2.57.40	4.861793	10.15.28. 0	3.24. 0	4.860917
12	9.16.47.20	2.59.22	4.861772	10.16.27.27	3.23.57	4.860882
13	9.17.46.34	3. 1. 1	4.861750	10.17.26.56	3.23.51	4.860847
14	9.18.45.48	3. 2.36	4.861726	10.18.26.25	3.23.41	4.860811
15	9.19.45. 2	3. 4. 9	4.861703	10.19.25.54	3.23.28	4.860776
16	9.20.44.17	3. 5.38	4.861679	10.20.25.25	3.23.11	4.860740
17	9.21.43.32	3. 7. 3	4.861654	10.21.24.56	3.22.50	4.860704
18	9.22.42.48	3. 8.26	4.861628	10.22.24.27	3.22.25	4.860668
19	9.23.42. 4	3. 9.45	4.861602	10.23.23.59	3.21.57	4.860631
20	9.24.41.20	3.11. 1	4.861575	10.24.23.31	3.21.25	4.860594
21	9.25.40.37	3.12.13	4.861548	10.25.23. 4	3.20.50	4.860557
22	9.26.39.55	3.13.22	4.861521	10.26.22.38	3.20.11	4.860520
23	9.27.39.12	3.14.27	4.861492	10.27.22.12	3.19.29	4.860483
24	9.28.38.31	3.15.29	4.861463	10.28.21.46	3.18.42	4.860446
25	9.29.37.50	3.16.28	4.861434	10.29.21.22	3.17.53	4.860408
26	10. 0.37. 9	3.17.23	4.861405	11. 0.20.59	3.16.59	4.860371
27	10. 1.36.29	3.18.15	4.861375	11. 1.20.35	3.16. 2	4.860334
28	10. 2.35.50	3.19. 3	4.861345	11. 2.20.13	3.15. 2	4.860295
29	10. 3.35.10	3.19.47	4.861315	11. 3.19.51	3.13.58	4.860256
30	10. 4.34.31	3.20.28	4.861284	11. 4.19.30	3.12.51	4.860218

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Tabula Loci Heliocentrici.

Anom. med.	Sig. 2.				Sig. 3.			
	Long. ♄ à 1 * γ	Inc. Aust.	Dis. à ☉ Cur.	Logarith.	Long. ♄ à 1 * γ	Inc. Aust.	Dis. à ☉ Cur.	Logarith.
0	S 0 1 11	0 1 11			S 0 1 11	0 1 11		
0	II. 4.19.30	3.12.51	4.860218		O. 4.13.52	2.14. 1	4.859029	
1	II. 5.19. 9	3.11.40	4.860181		O. 5.13.51	2.11.19	4.858988	
2	II. 6.18.48	3.10.25	4.860142		O. 6.13.51	2. 8.34	4.858946	
3	II. 7.18.29	3. 9. 7	4.860104		O. 7.13.50	2. 5.47	4.858905	
4	II. 8.18.10	3. 7.46	4.860065		O. 8.13.52	2. 2.58	4.858864	
5	II. 9.17.52	3. 6.21	4.860027		O. 9.13.54	2. 0. 6	4.858823	
6	II.10.17.35	3. 4.53	4.859988		O.10.13.56	1.57.12	4.858782	
7	II.11.17.18	3. 3.22	4.859949		O.11.13.59	1.54.16	4.858740	
8	II.12.17. 2	3. 1.47	4.859910		O.12.14. 3	1.51.18	4.858698	
9	II.13.16.46	3. 0. 9	4.859870		O.13.14. 7	1.48.17	4.858657	
10	II.14.16.22	2.58.27	4.859831		O.14.14.12	1.45.15	4.858615	
11	II.15.16.17	2.56.43	4.859792		O.15.14.18	1.42.11	4.858573	
12	II.16.16. 4	2.54.55	4.859753		O.16.14.25	1.39. 4	4.858532	
13	II.17.15.51	2.53. 4	4.859713		O.17.14.32	1.35.56	4.858490	
14	II.18.15.39	2.51.10	4.859673		O.18.14.40	1.32.46	4.858448	
15	II.19.15.27	2.49.12	4.859634		O.19.14.49	1.29.35	4.858406	
16	II.20.15.16	2.47.12	4.859594		O.20.14.58	1.26.21	4.858364	
17	II.21.15. 6	2.45. 8	4.859554		O.21.15. 8	1.23. 6	4.858321	
18	II.22.14.56	2.43. 2	4.859514		O.22.15.18	1.19.50	4.858279	
19	II.23.14.47	2.40.52	4.859474		O.23.15.30	1.16.31	4.858236	
20	II.24.14.39	2.38.40	4.859434		O.24.15.42	1.13.12	4.858194	
21	II.25.14.31	2.36.24	4.859394		O.25.15.55	1. 9.51	4.858152	
22	II.26.14.24	2.34. 6	4.859353		O.26.16. 9	1. 6.29	4.858110	
23	II.27.14.18	2.31.45	4.859313		O.27.16.24	1. 3. 5	4.858068	
24	II.28.14.12	2.29.21	4.859273		O.28.16.39	0.59.40	4.858026	
25	II.29.14. 7	2.26.54	4.859232		O.29.16.54	0.56.14	4.857983	
26	O. 0.14. 3	2.24.25	4.859192		I. 0.17.10	0.52.47	4.857941	
27	O. 1.13.59	2.21.53	4.859151		I. 1.17.27	0.49.19	4.857898	
28	O. 2.13.56	2.19.18	4.859110		I. 2.17.45	0.45.50	4.857855	
29	O. 3.13.54	2.16.41	4.859070		I. 3.18. 4	0.42.21	4.857813	
30	O. 4.13.52	2.14. 1	4.859029		I. 4.18.23	0.38.50	4.857770	

VENERIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. 4.			Sig. 5.		
	Long. $\odot$ a $\star \gamma$	Inc. Aust.	Dif. a $\odot$ Cur.	Long. $\odot$ a $\star \gamma$	Inc. Bor.	Dif. a $\odot$ Cur.
	S. O. ' "	O. ' "	Logarith.	S. O. ' "	O. ' "	Logarith.
0	1. 4.18.23	0.38.50	4.857770	2. 4.33.20	1. 7.28	4.856562
1	1. 5.18.43	0.35.18	4.857728	2. 5.34. 0	1.10.51	4.856526
2	1. 6.19. 4	0.31.46	4.857685	2. 6.34.42	1.14.13	4.856491
3	1. 7.19.25	0.28.13	4.857643	2. 7.35.24	1.17.34	4.856456
4	1. 8.19.48	0.24.40	4.857601	2. 8.36. 5	1.20.53	4.856422
5	1. 9.20.11	0.21. 6	4.857559	2. 9.36.47	1.24.11	4.856388
6	1.10.20.34	0.17.32	4.857516	2.10.37.30	1.27.27	4.856354
7	1.11.20.58	0.13.57	4.857474	2.11.38.13	1.30.42	4.856322
8	1.12.21.22	0.10.22	4.857433	2.12.38.58	1.33.55	4.856290
9	1.13.21.48	0. 6.47	4.857391	2.13.39.43	1.37. 6	4.856259
10	1.14.22.14	0. 3.12	4.857350	2.14.40.28	1.40.15	4.856228
11	1.15.22.41	Bor. 0.24	4.857308	2.15.41.14	1.43.23	4.856198
12	1.16.23. 8	0. 3.59	4.857267	2.16.42. 0	1.46.29	4.856169
13	1.17.23.37	0. 7.35	4.857226	2.17.42.47	1.49.32	4.856140
14	1.18.24. 6	0.11.10	4.857185	2.18.43.33	1.52.34	4.856112
15	1.19.24.36	0.14.45	4.857143	2.19.44.20	1.55.33	4.856085
16	1.20.25. 6	0.18.20	4.857103	2.20.45. 8	1.58.31	4.856058
17	1.21.25.37	0.21.55	4.857062	2.21.45.57	2. 1.26	4.856032
18	1.22.26. 9	0.25.29	4.857022	2.22.46.46	2. 4.19	4.856007
19	1.23.26.42	0.29. 3	4.856981	2.23.47.36	2. 7.10	4.855983
20	1.24.27.15	0.32.37	4.856941	2.24.48.25	2. 9.58	4.855960
21	1.25.27.49	0.36. 9	4.856902	2.25.49.15	2.12.43	4.855937
22	1.26.28.23	0.39.41	4.856863	2.26.50. 6	2.15.27	4.855915
23	1.27.28.58	0.43.13	4.856824	2.27.50.57	2.18. 7	4.855894
24	1.28.29.34	0.46.44	4.856786	2.28.51.48	2.20.46	4.855875
25	1.29.30.10	0.50.13	4.856748	2.29.52.39	2.23.21	4.855856
26	2. 0.30.47	0.53.42	4.856709	3. 0.53.30	2.25.54	4.855838
27	2. 1.31.24	0.57.10	4.856672	3. 1.54.22	2.28.24	4.855821
28	2. 2.32. 2	1. 0.37	4.856635	3. 2.55.15	2.30.51	4.855805
29	2. 3.32.41	1. 4. 3	4.856598	3. 3.56. 8	2.33.16	4.855790
30	2. 4.33.20	1. 7.28	4.856562	3. 4.57. 1	2.35.37	4.855776

VENERIS

Tabula Loci Heliocentri.

Anom. med.	Sig. 6.			Sig. 7.		
	Long. à I. * Y.	Inc. Bor.	Dif. à ☉ Cur.	Long. à I. * Y.	Inc. Bor.	Dif. à ☉ Cur.
	S O I "	O I "	Logarith.	S O I "	O I "	Logarith.
0	3. 4.57. 1	2.35.37	4.855776	4. 5.23.45	3.20.59	4.855903
1	3. 5.57.54	2.37.56	4.855763	4. 6.24.35	3.21.34	4.855927
2	3. 6.58.48	2.40.12	4.855751	4. 7.25.25	3.22. 6	4.855952
3	3. 7.59.41	2.42.24	4.855741	4. 8.26.15	3.22.33	4.855978
4	3. 9. 0.35	2.44.34	4.855731	4. 9.27. 4	3.22.57	4.856005
5	3.10. 1.28	2.46.41	4.855722	4.10.27.52	3.22.17	4.856034
6	3.11. 2.22	2.48.44	4.855715	4.11.28.42	3.23.33	4.856064
7	3.12. 3.16	2.50.44	4.855709	4.12.29.30	3.23.46	4.856095
8	3.13. 4.11	2.52.41	4.855704	4.13.30.17	3.23.54	4.856128
9	3.14. 5. 5	2.54.35	4.855700	4.14.31. 3	3.23.59	4.856161
10	3.15. 5.59	2.56.25	4.855698	4.15.31.50	3.24. 0	4.856196
11	3.16. 6.53	2.58.13	4.855696	4.16.32.35	3.23.57	4.856232
12	3.17. 7.48	2.59.56	4.855696	4.17.33.21	3.23.50	4.856270
13	3.18. 8.42	3. 1.37	4.855697	4.18.34. 5	3.23.40	4.856308
14	3.19. 9.37	3. 3.14	4.855699	4.19.34.48	3.23.25	4.856348
15	3.20.10.31	3. 4.47	4.855702	4.20.35.22	3.23. 7	4.856389
16	3.21.11.25	3. 6.17	4.855707	4.21.36.14	3.22.45	4.856431
17	3.22.12.19	3. 7.44	4.855713	4.22.36.55	3.22.20	4.856474
18	3.23.13.13	3. 9. 7	4.855720	4.23.37.37	3.21.50	4.856518
19	3.24.14. 7	3.10.26	4.855728	4.24.38.16	3.21.17	4.856563
20	3.25.15. 0	3.11.42	4.855737	4.25.38.55	3.20.40	4.856610
21	3.26.15.53	3.12.54	4.855748	4.26.39.34	3.19.59	4.856657
22	3.27.16.47	3.14. 3	4.855760	4.27.40.12	3.19.15	4.856705
23	3.28.17.40	3.15. 8	4.855773	4.28.40.48	3.18.27	4.856754
24	3.29.18.33	3.16. 9	4.855788	4.29.41.25	3.17.35	4.856804
25	4. 0.19.25	3.17. 7	4.855804	5. 0.42. 0	3.16.40	4.856856
26	4. 1.20.18	3.18. 1	4.855821	5. 1.42.34	3.15.41	4.856909
27	4. 2.21.10	3.18.51	4.855839	5. 2.43. 8	3.14.38	4.856962
28	4. 3.22. 2	3.19.38	4.855859	5. 3.43.41	3.13.31	4.857016
29	4. 4.22.54	3.20.20	4.855880	5. 4.44.13	3.12.22	4.857071
30	4. 5.23.45	3.20.59	4.855903	5. 5.44.44	3.11. 8	4.857126

VENERIS

Tabula Loci Heliocentrici.

Anom. n.ed.	Sig. 8.			Sig. 9.		
	Long. à 1 ^{re} γ	Inc. Bor.	Dif. à ☉ Cur.	Long. à 1 ^{re} γ	Inc. Bor.	Dif. à ☉ Cur.
	S. O. I. II	O. I. II	Logarith.	S. O. I. II	O. I. II	Logarith.
0	5. 5.44.44	3. 11. 8	4.857126	6. 5.52. 6	2. 9.34	4.859050
1	5. 6.45.13	3. 9.51	4.857183	6. 6.52. 4	2. 6.48	4.859117
2	5. 7.45.42	3. 8.31	4.857241	6. 7.52. 0	2. 4. 0	4.859184
3	5. 8.46.10	3. 7. 7	4.857299	6. 8.51.57	2. 1. 9	4.859251
4	5. 9.46.37	3. 5.39	4.857358	6. 9.51.51	1.58.16	4.859318
5	5.10.47. 3	3. 4. 8	4.857418	6.10.51.44	1.55.21	4.859384
6	5.11.47.28	3. 2.34	4.857478	6.11.51.37	1.52.25	4.859451
7	5.12.47.52	3. 0.57	4.857539	6.12.51.27	1.49.26	4.859517
8	5.13.48.15	2.59.16	4.857600	6.13.51.17	1.46.25	4.859582
9	5.14.48.37	2.57.32	4.857662	6.14.51. 6	1.43.22	4.859648
10	5.15.48.58	2.55.44	4.857725	6.15.50.54	1.40.17	4.859712
11	5.16.49.18	2.53.54	4.857788	6.16.50.41	1.37.11	4.859776
12	5.17.49.37	2.52. 0	4.857852	6.17.50.27	1.34. 3	4.859840
13	5.18.49.54	2.50. 3	4.857917	6.18.50.12	1.30.53	4.859903
14	5.19.50.11	2.48. 3	4.857982	6.19.49.56	1.27.42	4.859966
15	5.20.50.26	2.46. 0	4.858047	6.20.49.38	1.24.29	4.860029
16	5.21.50.41	2.43.53	4.858112	6.21.49.19	1.21.15	4.860091
17	5.22.50.54	2.41.44	4.858178	6.22.49. 0	1.17.59	4.860152
18	5.23.51. 6	2.39.32	4.858244	6.23.48.40	1.14.42	4.860212
19	5.24.51.18	2.37.17	4.858310	6.24.48.19	1.11.23	4.860272
20	5.25.51.28	2.34.59	4.858377	6.25.47.56	1. 8. 4	4.860331
21	5.26.51.37	2.32.39	4.858444	6.26.47.34	1. 4.43	4.860390
22	5.27.51.44	2.30.15	4.858511	6.27.47.10	1. 1.21	4.860448
23	5.28.51.50	2.27.49	4.858578	6.28.46.44	0.57.58	4.860505
24	5.29.51.57	2.25.20	4.858646	6.29.46.18	0.54.34	4.860561
25	6. 0.52. 1	2.22.49	4.858713	7. 0.45.50	0.51. 9	4.860617
26	6. 1.52. 4	2.20.15	4.858780	7. 1.45.22	0.47.43	4.860671
27	6. 2.52. 7	2.17.38	4.858848	7. 2.44.54	0.44.16	4.860725
28	6. 3.52. 7	2.14.59	4.858915	7. 3.44.24	0.40.49	4.860778
29	6. 4.52. 7	2.12.18	4.858983	7. 4.43.53	0.37.20	4.860830
30	6. 5.52. 6	2. 9.34	4.859050	7. 5.43.21	0.33.52	4.860881

VENERIS

Tabula Loci Heliocentrici.

Anom. med.	Sig. 10.			Sig. 11.		
	Long. $\odot$ à $\star \gamma$	Inc. Bor.	Dis. à $\odot$ Cur.	Long. $\odot$ à $\star \gamma$	Inc. Au. l.	Dis. à $\odot$ Cur.
	S O ' "	O ' "	Logarith.	S O ' "	O ' "	Logarith.
0	7. 5.43.21	0.33.52	4.860881	8. 5.22.25	1.10.12	4.861932
1	7. 6.42.49	0.30.22	4.860931	8. 6.21.36	1.13.30	4.861950
2	7. 7.42.16	0.26.53	4.860981	8. 7.20.47	1.16.46	4.861966
3	7. 8.41.42	0.23.22	4.861030	8. 8.19.57	1.20. 0	4.861981
4	7. 9.41. 7	0.19.52	4.861077	8. 9.19. 7	1.23.13	4.861995
5	7.10.40.32	0.16.21	4.861123	8.10.18.17	1.26.25	4.862007
6	7.11.39.56	0.12.50	4.861169	8.11.17.26	1.29.35	4.862019
7	7.12.39.19	0. 9.18	4.861213	8.12.16.36	1.32.44	4.862029
8	7.13.38.41	0. 5.47	4.861256	8.13.15.45	1.35.51	4.862039
9	7.14.38. 2	0. 2.15	4.861299	8.14.14.54	1.38.56	4.862048
10	7.15.37.24	Au.1.16	4.861340	8.15.14. 3	1.41.59	4.862055
11	7.16.36.44	0. 4.48	4.861380	8.16.13.12	1.45. 1	4.862061
12	7.17.36. 3	0. 8.19	4.861420	8.17.12.20	1.48. 1	4.862067
13	7.18.35.22	0.11.50	4.861458	8.18.11.29	1.50.58	4.862071
14	7.19.34.41	0.15.21	4.861495	8.19.10.38	1.53.54	4.862074
15	7.20.33.58	0.18.52	4.861530	8.20. 9.46	1.56.48	4.862075
16	7.21.33.15	0.22.22	4.861565	8.21. 8.54	1.59.40	4.862076
17	7.22.32.32	0.25.52	4.861599	8.22. 8. 3	2. 2.29	4.862076
18	7.23.31.48	0.29.21	4.861631	8.23. 7.12	2. 5.16	4.862075
19	7.24.31. 3	0.32.50	4.861663	8.24. 6.20	2. 8. 2	4.862072
20	7.25.30.18	0.36.18	4.861693	8.25. 5.28	2.10.44	4.862069
21	7.26.29.33	0.39.46	4.861722	8.26. 4.37	2.13.25	4.862064
22	7.27.28.47	0.43.12	4.861750	8.27. 3.46	2.16. 3	4.862059
23	7.28.28. 2	0.46.38	4.861777	8.28. 2.55	2.18.39	4.862054
24	7.29.27.15	0.50. 3	4.861802	8.29. 2. 4	2.21.12	4.862047
25	8. 0.26.27	0.53.27	4.861827	9. 0. 1.13	2.23.43	4.862038
26	8. 1.25.40	0.56.51	4.861851	9. 1. 0.22	2.26.11	4.862029
27	8. 2.24.51	1. 0.13	4.861873	9. 1.59.32	2.28.37	4.862019
28	8. 3.24. 3	1. 3.34	4.861894	9. 2.58.41	2.31. 0	4.862009
29	8. 4.23.14	1. 6.54	4.861914	9. 3.57.51	2.33.20	4.861997
30	8. 5.22.25	1.10.12	4.861932	9. 4.57. 1	2.35.37	4.861985

MERCURII

Tabula Motus Medij ab Aphelio.

Ann. Chr. Cur.	Anomalia $\odot$ s o ' "	An- nia	Mot. Anom. s o ' "	Die.	Mot. Anom s o ' "	Mot an.	Mo anom
1.	3. 1. 32. C	1	1. 23. 42. 7	1	0. 4. 5. 32	Hor. 0 ' ' "	H. 0 ' ' "
1591	3. 9. 2. 0	2	3. 17. 24. 14	2	0. 8. 11. 5	1 ' ' "	1 ' ' "
1591	5. 7. 2. 0	3	5. 11. 6. 21	3	0. 12. 16. 37	2 ' ' "	31 5. 17. 9
1601	5. 21. 32. 0	4	7. 8. 54. 0	4	0. 16. 21. 10	3 ' ' "	32 5. 27. 23
1621	6. 6. 2. 0	5	9. 2. 36. 7	5	0. 20. 27. 42	4 ' ' "	33 5. 37. 37
1641	7. 10. 32. 0	6	10. 26. 18. 14	6	0. 24. 33. 14	5 ' ' "	34 5. 47. 51
1661	7. 5. 2. 0	7	0. 20. 0. 21	7	0. 28. 38. 47	6 ' ' "	35 5. 58. 5
1681	7. 19. 32. 0	8	2. 17. 48. 0	8	1. 2. 44. 19	7 ' ' "	36 6. 8. 19
1701	8. 4. 2. 0	9	4. 11. 30. 7	9	1. 6. 49. 52	8 ' ' "	37 6. 18. 32
1721	8. 18. 32. 0	10	6. 5. 12. 14	10	1. 10. 55. 24	9 ' ' "	38 6. 28. 46
1741	9. 3. 2. 0	11	7. 28. 54. 21	11	1. 15. 0. 56	10 ' ' "	39 6. 39. 0
1751	9. 17. 32. 0	12	9. 26. 42. 0	12	1. 19. 6. 29	11 ' ' "	40 6. 49. 14
1791	10. 2. 2. 0	13	11. 20. 24. 7	13	1. 23. 12. 1	12 ' ' "	41 6. 59. 28
1801	10. 16. 32. 0	14	1. 14. 6. 14	14	1. 27. 17. 24	13 ' ' "	42 7. 9. 42
1901	0. 29. 2. 0	15	3. 7. 48. 21	15	2. 1. 23. 6	14 ' ' "	43 7. 19. 56
2001	3. 11. 32. 0	16	5. 5. 36. 0	16	2. 5. 28. 38	15 ' ' "	44 7. 30. 9
An- nia	Mot. anom. s o ' "	17	6. 29. 18. 7	17	2. 9. 34. 11	16 ' ' "	45 7. 40. 23
20	0. 14. 30. 0	18	8. 23. 0. 14	18	2. 13. 39. 43	17 ' ' "	46 7. 50. 37
40	0. 29. 0. 0	19	10. 16. 42. 21	19	2. 17. 45. 16	18 ' ' "	47 8. 0. 51
60	1. 13. 30. 0	20	0. 14. 30. 0	20	2. 21. 50. 48	19 ' ' "	48 8. 11. 5
80	1. 28. 0. 0	Men- A. Co.	Mot. Anom. s o ' "	21	2. 25. 56. 20	20 ' ' "	49 8. 21. 19
100	2. 12. 30. 0	Janua	0. 0. 0. 0	22	3. 0. 1. 53	21 ' ' "	50 8. 31. 32
200	4. 25. 0. 0	Febr.	4. 6. 51. 44	23	3. 4. 7. 25	22 ' ' "	51 8. 41. 46
300	7. 7. 30. 0	Mart.	8. 1. 26. 52	24	3. 8. 12. 58	23 ' ' "	52 8. 52. 0
400	9. 20. 0. 0	April.	0. 8. 18. 36	25	3. 12. 18. 30	24 ' ' "	53 9. 2. 14
500	0. 2. 30. 0	Maij.	4. 11. 4. 48	26	3. 16. 24. 2	25 ' ' "	54 9. 12. 28
600	2. 15. 0. 0	Iunij.	8. 17. 56. 22	27	3. 20. 29. 35	26 ' ' "	55 9. 22. 42
700	4. 27. 30. 0	Iulij.	0. 20. 42. 45	28	3. 24. 35. 7	27 ' ' "	56 9. 32. 56
800	7. 10. 0. 0	Aug.	4. 27. 34. 29	29	3. 28. 40. 40	28 ' ' "	57 9. 43. 9
900	9. 22. 30. 0	Sept.	9. 4. 26. 14	30	4. 2. 46. 12	29 ' ' "	58 9. 53. 23
1000	0. 5. 0. 0	Octo.	1. 7. 12. 26	31	4. 6. 51. 44	30 ' ' "	59 10. 3. 37
2000	0. 10. 0. 0	Nov.	5. 14. 4. 10	32	4. 10. 57. 17	31 ' ' "	60 10. 13. 51
3000	0. 15. 0. 0	Dec.	9. 16. 50. 22				
4000	0. 20. 0. 0	In anno Bissexti i. post Februarium, adde u- num diem & unius diei motum.					
5000	0. 25. 0. 0						
6000	1. 0. 0. 0						

Long. Aphelii $\odot$ a γ ————— 7. 13. 48. 0
 Long. $\odot$ a γ ————— 0. 15. 42. 0
 Incl. Orb. $\odot$ ————— 6. 54. 0
 Dist. med. $\odot$ a $\odot$ ————— 38710
 Eccentricitas ————— 7970

MERCURI

Tabula Loci Heliocentrici.

Anom. med.	Sig. 0.			Sig. I.		
	Long. $\odot$ a $\star$ $\vee$	Inc. Anst.	Dij. $\odot$ Cur.	Long. $\odot$ a $\star$ $\vee$	Inc. Anst.	Dij. $\odot$ Cur.
0	S 0 1 11	0 1 11	Logarith.	S 0 1 11	0 1 11	Logarith.
0	7.13.37.38	3.14.38	4.668435	8. 3.58.36	5. 9.40	4.660373
1	7.14.17.50	3.18.54	4.668395	8. 4.40.16	5.12.58	4.659860
2	7.14.58. 4	3.23. 9	4.668340	8. 5.22. 1	5.16.14	4.659332
3	7.15.38.18	3.27.22	4.668269	8. 6. 3.51	5.19.27	4.658789
4	7.16.18.34	3.31.34	4.668184	8. 6.45.47	5.22.38	4.658231
5	7.16.58.49	3.35.43	4.668082	8. 7.27.50	5.25.47	4.657656
6	7.17.39. 6	3.39.51	4.667963	8. 8. 9.59	5.28.53	4.657066
7	7.18.19.24	3.43.58	4.667829	8. 8.52.15	5.31.57	4.656459
8	7.18.59.45	3.48. 2	4.667678	8. 9.34.37	5.34.58	4.655838
9	7.19.40. 6	3.52. 5	4.667512	8.10.17. 6	5.37.57	4.655201
10	7.20.20.29	3.56. 6	4.667330	8.10.59.41	5.40.53	4.654549
11	7.21. 0.54	4. 0. 6	4.667132	8.11.42.24	5.43.46	4.653882
12	7.21.41.21	4. 4. 3	4.666918	8.12.25.15	5.46.37	4.653199
13	7.22.21.51	4. 7.59	4.666687	8.13. 8.15	5.49.25	4.652500
14	7.23. 2.23	4.11.53	4.666441	8.13.51.22	5.52.10	4.651787
15	7.23.42.58	4.15.45	4.666180	8.14.34.37	5.54.52	4.651059
16	7.24.23.35	4.19.34	4.665904	8.15.18. 1	5.57.31	4.650314
17	7.25. 4.14	4.23.22	4.665610	8.16. 1.33	6. 0. 8	4.649555
18	7.25.44.58	4.27. 9	4.665301	8.16.45.14	6. 2.41	4.648780
19	7.26.25.44	4.30.53	4.664976	8.17.29. 4	6. 5.12	4.647989
20	7.27. 6.34	4.34.35	4.664636	8.18.13. 4	6. 7.40	4.647183
21	7.27.47.27	4.38.15	4.664280	8.18.57.15	6.10. 4	4.646363
22	7.28.28.25	4.41.53	4.663908	8.19.41.35	6.12.25	4.645526
23	7.29. 9.26	4.45.29	4.663522	8.20.26. 5	6.14.44	4.644674
24	7.29.50.31	4.49. 3	4.663119	8.21.10.45	6.16.58	4.643808
25	8. 0.31.40	4.52.34	4.662700	8.21.55.36	6.19.10	4.642925
26	8. 1.12.54	4.56. 4	4.662266	8.22.40.37	6.21.18	4.642028
27	8. 1.54.12	4.59.31	4.661817	8.23.25.50	6.23.23	4.641115
28	8. 2.35.35	5. 2.56	4.661351	8.24.11.14	6.25.25	4.640187
29	8. 3.17. 3	5. 6.19	4.660870	8.24.56.51	6.27.22	4.639244
30	8. 3.58.36	5. 9.40	4.660373	8.25.42.39	6.29.17	4.638286

MERCURII

Tabula Loci Heliocentrici.

Anom med	Sig. 2.			Sig. 3.		
	Long. ♄ à 1 * γ	Inc. Aust.	Dif. à ☉ Cur.	Long. ♄ à 1 * γ	Inc. Aust.	Dif. à ☉ Cur.
	S O I "	O I "	Logarith.	S O I "	O I "	Logarith.
0	8.25.42.39	6.29.17	4.638286	9.20.34. 1	6.52.31	4.602718
1	8.26.28.39	6.31. 7	4.637312	9.21.28.31	6.51.55	4.601318
2	8.27.14.51	6.32.54	4.636323	9.22.23.25	6.51.12	4.599905
3	8.28. 1.17	6.34.37	4.635320	9.23.18.40	6.50.23	4.598478
4	8.28.47.57	6.36.17	4.634303	9.24.14.18	6.49.27	4.597040
5	8.29.34.49	6.37.52	4.633270	9.25.10.20	6.48.25	4.595590
6	9. 0.21.54	6.39.24	4.632221	9.26. 6.45	6.47.15	4.594129
7	9. 1. 9.14	6.40.51	4.631158	9.27. 3.34	6.45.58	4.592655
8	9. 1.56.48	6.42.14	4.630081	9.28. 0.47	6.44.34	4.591170
9	9. 2.44.37	6.43.33	4.628988	9.28.58.26	6.43. 2	4.589674
10	9. 3.32.40	6.44.48	4.627880	9.29.56.30	6.41.24	4.588166
11	9. 4.21. 0	6.45.59	4.626757	10. 0.54.59	6.39.37	4.586648
12	9. 5. 9.33	6.47. 5	4.625620	10. 1.53.54	6.37.43	4.585119
13	9. 5.58.22	6.48. 6	4.624469	10. 2.53.14	6.35.41	4.583581
14	9. 6.47.29	6.49. 3	4.623302	10. 3.53. 1	6.33.31	4.582034
15	9. 7.36.51	6.49.55	4.622121	10. 4.53.16	6.31.12	4.580478
16	9. 8.26.30	6.50.43	4.620926	10. 5.53.56	6.28.46	4.578912
17	9. 9.16.26	6.51.25	4.619717	10. 6.55. 5	6.26.11	4.577338
18	9.10. 6.39	6.52. 3	4.618492	10. 7.56.42	6.23.27	4.575755
19	9.10.57.10	6.52.36	4.617253	10. 8.58.46	6.20.35	4.574164
20	9.11.48. 0	6.53. 3	4.616001	10.10. 1.19	6.17.34	4.572565
21	9.12.39. 7	6.53.25	4.614734	10.11. 4.21	6.14.24	4.570960
22	9.13.30.34	6.53.42	4.613454	10.12. 7.53	6.11. 5	4.569348
23	9.14.22.20	6.53.53	4.612159	10.13.11.54	6. 7.36	4.567730
24	9.15.14.24	6.53.59	4.610851	10.14.16.24	6. 3.59	4.566107
25	9.16. 6.49	6.53.59	4.609529	10.15.21.24	6. 0.12	4.564479
26	9.16.59.33	6.53.54	4.608194	10.16.26.54	5.56.15	4.562845
27	9.17.52.38	6.53.42	4.606845	10.17.32.55	5.52. 9	4.561207
28	9.18.46. 5	6.53.25	4.605482	10.18.39.27	5.47.52	4.559567
29	9.19.39.52	6.53. 1	4.604107	10.19.46.30	5.43.26	4.557924
30	9.20.34. 1	6.52.31	4.602718	10.20.54. 4	5.38.50	4.556279

MERCURII

Tabula Loci Heliocentrici.

Anom.
med.

Sig. 4.

	Long. à I * γ	Inc. Aust.	Dif. à ☉ Cur.
	S O I "	O I "	Logarith.
0	10.20.54.4	5.38.50	4.556279
1	10.22. 2.10	5.34. 4	4.554631
2	10.23.10.48	5.29. 7	4.552984
3	10.24.19.58	5.24. 1	4.551335
4	10.25.29.39	5.18.44	4.549687
5	10.26.39.53	5.12.16	4.548040
6	10.27.50.40	5. 7.38	4.546395
7	10.29. 1.58	5. 1.49	4.544752
8	11. 0.13.49	4.55.50	4.543114
9	11. 1.26.14	4.49.40	4.541479
10	11. 2.39.12	4.43.19	4.539849
11	11. 3.52.42	4.36.48	4.538226
12	11. 5. 6.46	4.30. 6	4.536608
13	11. 6.21.23	4.23.13	4.534999
14	11. 7.36.32	4.16.10	4.533397
15	11. 8.52.15	4. 8.56	4.531805
16	11.10. 8.31	4. 1.31	4.530225
17	11.11.25.20	3.53.56	4.528655
18	11.12.42.42	3.46.11	4.527097
19	11.14. 0.38	3.38.15	4.525553
20	11.15.19. 5	3.30. 8	4.524023
21	11.16.38. 5	3.21.52	4.522509
22	11.17.57.38	3.13.26	4.521011
23	11.19.17.42	3. 4.50	4.519531
24	11.20.38.18	2.56. 4	4.518069
25	11.21.59.26	2.47. 9	4.516626
26	11.23.21. 5	2.38. 4	4.515205
27	11.24.43.16	2.28.51	4.513806
28	11.26. 5.58	2.19.29	4.512430
29	11.27.29. 9	2. 9.58	4.511079
30	11.28.52.50	2. 0.20	4.509752

Sig. 5.

Long. à I * γ	Inc. Aust.	Dif. à ☉ Cur.
S O I "	O I "	Logarith.
11.28.52.50	2. 0.20	4.509752
0. 0.17. 0	1.50.33	4.508451
0. 1.41.39	1.40.39	4.507179
0. 3. 6.47	1.30.38	4.505935
0. 4.32.22	1.20.31	4.504721
0. 5.58.25	1.10.16	4.503537
0. 7.24.54	0.59.56	4.502386
0. 8.51.49	0.49.31	4.501268
0.10.19. 9	0.39. 1	4.500185
0.11.46.55	0.28.26	4.499137
0.13.15. 3	0.17.47	4.498126
0.14.43.35	0. 7. 4	4.497152
0.16.12.30	Bar.3.41	4.496217
0.17.41.45	0.14.29	4.495321
0.19.11.21	0.25.19	4.494467
0.20.41.16	0.36.10	4.493655
0.22.11.30	0.47. 2	4.492885
0.23.42. 2	0.57.54	4.492158
0.25.12.50	1. 8.45	4.491476
0.26.43.54	1.19.35	4.490840
0.28.15.13	1.30.24	4.490248
0.29.46.45	1.41.10	4.489702
1. 1.18.30	1.51.54	4.489204
1. 2.50.26	2. 2.33	4.488755
1. 4.22.32	2.13. 9	4.488354
1. 5.54.47	2.23.39	4.488003
1. 7.27.10	2.34. 4	4.487739
1. 8.59.41	2.44.23	4.487451
1.10.32.16	2.54.36	4.487252
1.12. 4.55	3. 4.41	4.487104
1.13.37.38	3.14.38	4.487008

MERCURII

Tabula Locī Heliocentrici.

Anom med.	Sig. 6.			Sig. 7.		
	Long. $\odot$ Δ $\times$ γ	Inc. Bor.	Dif. Δ $\odot$ Cur. Logarith.	Long. $\odot$ Δ $\times$ γ	Inc. Bor.	Dif. Δ $\odot$ Cur. Logarith.
0	S 0 1 "	0 1 "		S 0 1 "	0 1 "	
0	1.13.37.38	3.14.38	4.487008	2.28.43.10	6.36. 7	4.507129
1	1.15.10.23	3.24.27	4.486962	3. 0. 7.52	6.38.57	4.508458
2	1.16.43. 8	3.34. 7	4.486969	3. 1.32. 3	6.41.32	4.509819
3	1.18.15.52	3.43.36	4.487029	3. 2.55.46	6.43.51	4.511209
4	1.19.48.35	3.52.56	4.487140	3. 4.18.56	6.45.56	4.512629
5	1.21.21.14	4. 2. 5	4.487304	3. 5.41.33	6.47.46	4.514078
6	1.22.53.48	4.11. 3	4.487521	3. 7. 3.38	6.49.21	4.515553
7	1.24.26.17	4.19.50	4.487789	3. 8.25. 9	6.50.42	4.517052
8	1.25.58.40	4.28.24	4.488109	3. 9.46. 9	6.51.48	4.518576
9	1.27.30.55	4.36.46	4.488481	3.11. 6.34	6.52.41	4.520121
10	1.29. 3. 0	4.44.55	4.488905	3.12.26.25	6.53.20	4.521688
11	2. 0.34.53	4.52.51	4.489378	3.13.45.44	6.53.46	4.523276
12	2. 2. 6.36	5. 0.33	4.489901	3.15. 4.28	6.53.59	4.524882
13	2. 3.38. 6	5. 8. 1	4.490474	3.16.22.36	6.53.58	4.526505
14	2. 5. 9.21	5.15.15	4.491097	3.17.40.10	6.53.45	4.528144
15	2. 6.40.21	5.22.14	4.491768	3.18.57.10	6.53.20	4.529798
16	2. 8.11. 5	5.28.58	4.492408	3.20.13.35	6.52.43	4.531467
17	2. 9.41.32	5.35.27	4.493254	3.21.29.23	6.51.54	4.533148
18	2.11.11.30	5.41.42	4.494068	3.22.44.37	6.50.54	4.534841
19	2.12.41.26	5.47.40	4.494928	3.23.59.16	6.49.43	4.536543
20	2.14.10.54	5.53.23	4.495833	3.25.13.19	6.48.21	4.538255
21	2.15.40. 0	5.58.51	4.496782	3.26.26.48	6.46.48	4.539975
22	2.17. 8.43	6. 4. 3	4.497773	3.27.39.42	6.45. 6	4.541702
23	2.18.37. 2	6. 8.58	4.498807	3.28.52. 1	6.43.13	4.543434
24	2.20. 4.58	6.13.38	4.499882	4. 0. 3.45	6.41.11	4.545172
25	2.21.32.28	6.18. 3	4.500997	4. 1.14.55	6.38.59	4.546914
26	2.22.59.32	6.22.11	4.502151	4. 2.25.30	6.36.39	4.548659
27	2.24.26. 8	6.26. 3	4.503342	4. 3.35.30	6.34. 9	4.550406
28	2.25.52.17	6.29.40	4.504569	4. 4.44.56	6.31.32	4.552154
29	2.27.17.57	6.33. 1	4.505832	4. 5.53.48	6.28.46	4.553902
30	2.28.43.10	6.36. 7	4.507129	4. 7. 2. 8	6.25.52	4.555650

MERCURII

Tabula Loci Heliocentrici.

Anom med.	Sig. 8.			Sig. 9.		
	Long. ☿ a ♀	Inc. Bor.	Dif. a ☉ Cur.	Long. ☿ a ♀	Inc. Bor.	Dif. a ☉ Cur.
	S. O. I. "	O. I. "	Logarith.	S. O. I. "	O. I. "	Logarith.
0	4. 7. 2. 8	6. 25. 52	4. 555650	5. 7. 16. 16	4. 18. 5	4. 604628
1	4. 8. 9. 53	6. 22. 51	4. 557396	5. 8. 9. 56	4. 13. 0	4. 606072
2	4. 9. 17. 4	6. 19. 43	4. 559139	5. 9. 3. 14	4. 7. 53	4. 607500
3	4. 10. 23. 44	6. 16. 27	4. 560881	5. 9. 56. 10	4. 2. 44	4. 608914
4	4. 11. 29. 49	6. 13. 5	4. 562618	5. 10. 48. 45	3. 57. 34	4. 610311
5	4. 12. 35. 23	6. 9. 36	4. 564352	5. 11. 40. 58	3. 52. 23	4. 611693
6	4. 13. 40. 25	6. 6. 1	4. 566080	5. 12. 32. 51	3. 47. 10	4. 613059
7	4. 14. 44. 54	6. 2. 20	4. 567801	5. 13. 24. 24	3. 41. 57	4. 614408
8	4. 15. 48. 52	5. 58. 33	4. 569516	5. 14. 15. 38	3. 36. 42	4. 615743
9	4. 16. 52. 21	5. 54. 41	4. 571225	5. 15. 6. 31	3. 31. 27	4. 617060
10	4. 17. 55. 17	5. 50. 43	4. 572926	5. 15. 57. 6	3. 26. 10	4. 618362
11	4. 18. 57. 44	5. 46. 41	4. 574619	5. 16. 47. 23	3. 20. 53	4. 619647
12	4. 19. 59. 39	5. 42. 33	4. 576302	5. 17. 37. 21	3. 15. 36	4. 620916
13	4. 21. 1. 5	5. 38. 21	4. 577977	5. 18. 27. 0	3. 10. 17	4. 622168
14	4. 22. 2. 2	5. 34. 4	4. 579641	5. 19. 16. 22	3. 4. 58	4. 623404
15	4. 23. 2. 30	5. 29. 44	4. 581295	5. 20. 5. 27	2. 59. 39	4. 624622
16	4. 24. 2. 31	5. 25. 19	4. 582939	5. 20. 54. 15	2. 54. 19	4. 625825
17	4. 25. 2. 3	5. 20. 50	4. 584570	5. 21. 42. 47	2. 48. 59	4. 627011
18	4. 26. 1. 5	5. 16. 18	4. 586191	5. 22. 31. 3	2. 43. 39	4. 628180
19	4. 26. 59. 42	5. 11. 42	4. 587801	5. 23. 19. 3	2. 38. 18	4. 629332
20	4. 27. 57. 52	5. 7. 3	4. 589398	5. 24. 6. 48	2. 32. 57	4. 630468
21	4. 28. 55. 35	5. 2. 21	4. 590983	5. 24. 54. 17	2. 27. 36	4. 631587
22	4. 29. 52. 52	4. 57. 36	4. 592555	5. 25. 41. 31	2. 22. 16	4. 632688
23	5. 0. 49. 44	4. 52. 48	4. 594113	5. 26. 28. 51	2. 16. 55	4. 633772
24	5. 1. 46. 9	4. 47. 57	4. 595658	5. 27. 15. 17	2. 11. 34	4. 634841
25	5. 2. 42. 9	4. 43. 4	4. 597188	5. 28. 1. 48	2. 6. 13	4. 635892
26	5. 3. 37. 47	4. 38. 8	4. 598705	5. 28. 48. 6	2. 0. 52	4. 636927
27	5. 4. 32. 59	4. 33. 10	4. 600207	5. 29. 34. 12	1. 55. 32	4. 637943
28	5. 5. 27. 48	4. 28. 11	4. 601696	6. 0. 20. 4	1. 50. 12	4. 638943
29	5. 6. 22. 14	4. 23. 9	4. 603169	6. 1. 5. 43	1. 44. 52	4. 639927
30	5. 7. 16. 16	4. 18. 5	4. 604628	6. 1. 51. 11	1. 39. 32	4. 640894

MERCURII

Tabula Loci Heliocentrici.

Anom. med.	Sig. 10.			Sig. 11.		
	Long. γ α $\star$ γ	Inc. Bor.	Dis. α $\odot$ Cur.	Long. γ α $\star$ γ	Inc. Auf.	Dis. α $\odot$ Cur.
	S O ' "	O ' "	Logarith.	S O ' "	O ' "	Logarith.
0	6. 1.51.11	1.39.22	4.640894	6.22.21.40	0.55.27	4.662081
1	6. 2.36.26	1.34.13	4.641844	6.24. 2.54	1. 0.24	4.662529
2	6. 3.21.30	1.28.54	4.642777	6.24.44. 4	1. 5.19	4.662961
3	6. 4. 6.22	1.23.35	4.643693	6.25.25. 9	1.10.13	4.663376
4	6. 4.51. 3	1.18.17	4.644592	6.26. 6.10	1.15. 6	4.663775
5	6. 5.35.33	1.13. 0	4.645474	6.26.47. 6	1.19.58	4.664157
6	6. 6.19.53	1. 7.43	4.646340	6.27.28. 0	1.24.49	4.664524
7	6. 7. 4. 1	1. 2.26	4.647188	6.28. 8.49	1.29.39	4.664873
8	6. 7.48. 0	0.57.10	4.648019	6.28.49.35	1.34.27	4.665206
9	6. 8.31.50	0.51.55	4.648834	6.29.30.18	1.39.14	4.665523
10	6. 9.15.21	0.46.40	4.649632	7. 0.10.58	1.44. 0	4.665824
11	6. 9.59. 1	0.41.26	4.650412	7. 0.51.34	1.48.45	4.666109
12	6.10.42.23	0.36.13	4.651177	7. 1.32. 8	1.53.29	4.666377
13	6.11.25.35	0.31. 0	4.651924	7. 2.12.40	1.58.11	4.666629
14	6.12. 8.39	0.25.48	4.652655	7. 2.53. 8	2. 2.52	4.666865
15	6.12.51.35	0.20.37	4.653369	7. 3.33.34	2. 7.32	4.667084
16	6.13.34.23	0.15.26	4.654066	7. 4.13.59	2.12.10	4.667287
17	6.14.17. 3	0.10.17	4.654745	7. 4.54.22	2.16.47	4.667474
18	6.14.59.36	0. 5. 8	4.655410	7. 5.34.44	2.21.23	4.667646
19	6.15.42. 2	0. 0. 0	4.656057	7. 6.15. 4	2.25.57	4.667800
20	6.16.24.20	0. 5. 7	4.656688	7. 6.55.21	2.30.30	4.667939
21	6.17. 6.30	0.10.13	4.657301	7. 7.35.37	2.35. 1	4.668060
22	6.17.48.35	0.15.19	4.657899	7. 8.15.53	2.39.31	4.668166
23	6.18.30.33	0.20.23	4.658479	7. 8.56. 9	2.44. 0	4.668257
24	6.19.12.26	0.25.27	4.659044	7. 9.36.22	2.48.27	4.668330
25	6.19.54.12	0.30.29	4.659592	7.10.16.35	2.52.53	4.668388
26	6.20.35.52	0.35.31	4.660123	7.10.56.48	2.57.17	4.668429
27	6.21.17.27	0.40.32	4.660637	7.11.37. 1	3. 1.39	4.668453
28	6.21.58.56	0.45.31	4.661134	7.12.17.13	3. 6. 0	4.668463
29	6.22.40.20	0.50.30	4.661615	7.12.57.26	3.10.20	4.668456
30	6.23.21.40	0.55.27	4.662081	7.13.37.38	3.14.38	4.668435

Catalogus Quarundam Fixarum.

<i>Stellarum Nomina.</i>	<i>Longitudo</i> ° ' "	<i>Latitudo.</i> ° ' "	<i>Mag</i>
<i>Australis in precedente cornu Arietis. 1 γ *</i>	0. 0. 0	7. 8. f. B	4
<i>Borealis sequens in eodem cornu</i>	0. 0. 46	8. 29. B	4
<i>Lucida cathedra Cassiopeæ</i>	0. 1. 58 f.	51. 14. B	3
<i>Ceti præcedens trium in gena</i>	0. 4. 25	14. 32. A	3
<i>Lucida in vertice γ</i>	0. 4. 29	9. 57. B	3
<i>Schedir Cassiopeæ</i>	0. 4. 40 f.	46. 35. B	3
<i>Medium oris Ceti</i>	0. 6. 16 f.	12. 2. f. A	3
<i>In flexura Cassiopeæ</i>	0. 10. 50 f.	48. 46. B	3
<i>Australis pes Andromeda</i>	0. 11. 2	27. 46. f. A	2
<i>Lucida mandibula Ceti</i>	0. 11. 10	12. 37. A	2
<i>Genu Cassiopeæ</i>	0. 14. 44	46. 22. B	3
<i>Caput Medusæ</i>	0. 23. 0	22. 22. B	3
<i>Lucida Pleiadum</i>	0. 26. 47	4. 0. B	3
<i>Lucidum latus Persei</i>	0. 28. 40	30. 5. B	2
<i>Prima Hyadum</i>	1. 2. 35	5. 46. f. A	3
<i>Inter hanc & oculum boreum ♂</i>	1. 3. 39 f.	4. 2. A	3
<i>Oculus boreus ♂</i>	1. 5. 16	2. 36. f. A	3
<i>Austrinus oculus, Aldebaran</i>	1. 6. 35 f.	5. 31. A	1
<i>Lucidus pes Orionis, Rigel</i>	1. 13. 40	31. 11. A	1
<i>In femore Leporis</i>	1. 16. 29 f.	43. 57. A	3
<i>Præcedens humerus Orionis</i>	1. 17. 46	16. 53. A	2
<i>Capella, Hircus</i>	1. 18. 39	22. 50. f. B	1
<i>Prima balthæi Orionis</i>	1. 19. 13 f.	23. 38. A	2
<i>In extremitate cornu borei ♂</i>	1. 19. 22 f.	5. 20. B	2
<i>Media balthæi Orionis</i>	1. 20. 17	24. 33. f. A	2
<i>Ultima balthæi Orionis</i>	1. 21. 29 f.	25. 21. f. A	2
<i>In extremitate cornu australis ♂</i>	1. 21. 35	2. 14. A	3
<i>Ultima cauda Ursæ minoris, Polaris</i>	1. 25. 25 f.	66. 2. B	2
<i>Sequens humerus Orionis</i>	1. 25. 35	16. 6. A	2
<i>Dexter humerus Aurigæ</i>	1. 26. 45	21. 29. B	4
<i>Propus</i>	1. 27. 45	0. 13. A	4
<i>Præcedentis II pes prior</i>	2. 0. 16	0. 58. A	2

Catalogus Quarundam Fixarum.

Stellarum Nomina.	Longitudo	Latitudo.	Mag
	S O I	O I	
<i>Sequens in eodem pede, Caix</i>	2. 2. 7	0.53. A	3
<i>In extremo pede priore Canis</i>	2. 4. 5f.	41.18.f.A	2
<i>Lucida pedis II</i>	2. 5.54	6.48.f.A	2
<i>In boreali genu II</i>	2. 6.45	2. 1. B	3
<i>Canis Major, Sirius</i>	2.10.58f.	39.30. A	1
<i>In sinistro genu sequentis II</i>	2.11.49	2. 6.f.A	3
<i>In Ventre sequentis II</i>	2.15.19	0.13.f.A	3
<i>Caput Superioris II Castor</i>	2.17. 4	10. 2. B	2
<i>Caput Inferioris II Pollux</i>	2.20. 6	6.38. B	2
<i>Canis Minor, Procyon</i>	2.22.41f.	15.57. A	2
<i>In radice caudæ S</i>	2.28. 8f.	2.18.f.A	4
<i>Præsepe, pectus S</i>	3. 4. 9f.	1.14. B	neb
<i>Asellus boreus</i>	3. 4.20	3. 8. B	4
<i>Asellus australis</i>	3. 5.31	0. 4. B	4
<i>Brachium austrinum S</i>	3.10.26f.	5. 8. A	3
<i>Superior præcedentium in □ Ursæ Majoris</i>	3.11.57	49.40. B	2
<i>Inferior ejusdem □</i>	3.16. 6f.	45. 3.f.B	2
<i>In Capite S australior</i>	3.17.28	9.40. B	3
<i>Antecedens Regulæ proximè</i>	3.24. 6f.	0. 0.f.B	4
<i>Cor Hydræ</i>	3.24. 8f.	22.24. A	1
<i>Trium in collo S borea</i>	3.24.20f.	11.50. B	3
<i>Australis colli S</i>	3.24.43	4.52. B	3
<i>Media S Lucida colli S</i>	3.26.22	8.47. B	2
<i>Leonis Cor, Regulus</i>	3.26.40	0.26.f.B	1
<i>Inferior sequentium in □ Ursæ Majoris</i>	3.27. 8	47. 6.f.B	2
<i>Superior ejusdem</i>	3.27.48f.	51.37. B	2
<i>Tertia ab extrema in cauda Draconis</i>	4. 4.33f.	66.36. B	2
<i>Radix caudæ Ursæ Majoris</i>	4. 5.33	54.18. B	2
<i>Lucida lumbi sive tergum S</i>	4. 8. 4	14.20. B	2
<i>In clune S</i>	4.10.13	9.41.f.B	3
<i>Penultima caudæ Ursæ Majoris</i>	4.12.19f.	56.22. B	2
<i>In femore S</i>	4.14.21f.	6. 7. B	3

Catalogus Quarundam Fixarum.

<i>Stellarum Nomina.</i>	<i>Longitudo.</i> S O I	<i>Latitudo.</i> O I	<i>Mag</i>
<i>Cauda ♏</i>	4.18.26	12.18. B	1
<i>Informis inter caudas Ursæ & Leonis</i>	4.21.21f.	40. 6. B	2
<i>Ultima caudæ Ursæ Majoris</i>	4.23.35	54.25. B	2
<i>In extremo alæ Australis m</i>	4.23.55	0.43. B	3
<i>Præcedens 4. in sinistra alæ</i>	5. 1.39	1.25. B	4
<i>Vindemiatrix</i>	5. 6.46	16.15.f.B	3
<i>Alteræ sequens</i>	5. 6.58f.	2.50. B	3
<i>In dextro latere sub cingulo</i>	5. 8.18	8.41. B	3
<i>Ultima in sinistra alæ</i>	5.15. 0	1.45. B	4
<i>Sinister humerus Bootis</i>	5.15.28f.	49.33.f.B	3
<i>Spica Virginis</i>	5.20.39	1.59. A	1
<i>Arcturus.</i>	5.21. 2	31. 2.f.B	1
<i>Lucida Coronæ</i>	6. 9. 1f.	44.23. B	2
<i>Lanx austrina ☾</i>	6.11.54	0.26. B	2
<i>Lanx borea ☽</i>	6.16.11	8.35. B	2
<i>Sub boreali lance in sinistro brachio</i>	6.17.50	7.37. A	3
<i>Lucida cotæ serpentis</i>	6.18.53	25.35. B	2
<i>Tertia ab austrina lance ad ortum</i>	6.21.56	4.28. B	3
<i>Dexter humerus Herculis</i>	6.27.50f.	42.48. B	3
<i>Sinistra manus Ophiuchi</i>	6.29. 7f.	17.19. B	3
<i>Media Lucidiorum in fronte m</i>	6.29.22	1.54.f.A	3
<i>Australis zelandem.</i>	6.29.48	5.22.f.A	3
<i>Suprema in fronte m</i>	6.29.59	1. 5. B	2
<i>Sinistrum genu Ophiuchi</i>	7. 6. 2	11.30. B	3
<i>Cor m Antares</i>	7. 6.34	4.29. A	1
<i>Sinister humerus Herculis</i>	7.11.33	47.47. B	3
<i>Caput Herculis</i>	7.12.54	37.23. B	3
<i>Genu dextrum Ophiuchi</i>	7.14.47	7.18. B	3
<i>In dextra tibia Ophiuchi</i>	7.16.46	2.12. B	3
<i>Caput Ophiuchi</i>	7.19.13	35.57. B	3
<i>Dexter humerus ejusdem</i>	7.22. 8	28. 1. B	3
<i>Lucida Capitis Draconis</i>	7.24.47	75. 3f.B	3

Catalogus Quarundam Fixarum.

<i>Stellarum Nomina.</i>	<i>Longitudo.</i> S O I	<i>Latitudo.</i> O I	<i>Mag</i>
<i>Lucida Lyrae</i>	8.12. 6	61.47. f.B	1
<i>Orientalis sive ultima capitis ♀</i>	8.13. 4	1.31. B	4
<i>Cauda Vulturis</i>	8.16.38	36.16. f.B	3
<i>Rostrum Cygni</i>	8.28. 7	49. 2. B	3
<i>Lucida Vulturis</i>	8.28.32	29.21. f.B	2
<i>Trium in cornu</i> vs { <i>Borea</i>	9. 0.41	7. 2. B	3
		<i>Australis</i>	
<i>Antecedens lucidior in manu</i> ≈	9. 0.54	4.41. B	3
	9. 8.35	8.10. B	4
<i>Superior ala Cygni</i>	9.13.16	64.28. B	3
<i>Duarum lucidarum in Cauda vs praecedens</i>	9.18.37	2.26. A	3
<i>Sinister humerus</i> ≈	9.20.14	8.42. B	3
<i>Sequens cauda</i> vs	9.20.20	2.29. A	3
<i>Pectus Cygni</i>	9.21.48	57. 9. B	3
<i>Os Pegasi</i>	9.28.45	22. 7. f.B	3
<i>Inferior ala Cygni</i>	10. 0. 6	43.44. B	3
<i>Dexter humerus</i> ≈	10. 0.22	10.42. B	3
<i>Fomahant</i>	10. 3.36 f.	21. 3. A	1
<i>Cauda Cygni</i>	10. 2.16 f.	59.56. f.B	2
<i>Cubitus dexter</i> ≈	10. 3.33	8.17. f.B	3
<i>Australis dextrae tibiae</i> ≈	10. 5.45	8.10. B	3
<i>Marchab Pegasi</i>	10.20.16 f.	19.26. B	2
<i>Scheat Pegasi</i>	10.26.12	31. 7. f.B	2
<i>Borealis cauda Ceti</i>	10.27.46	10. 1. A	3
<i>Australis cauda Ceti</i>	10.29.19	20.47. A	2
<i>Extrema ala Pegasi</i>	11. 6. 1	12.35. B	2
<i>Ad dorsum Ceti praecedens</i>	11. 8.34 f.	16.05. A	3
<i>Dexter humerus Cephei</i>	11. 9.36	68.54. B	3
<i>Caput Andromeda</i>	11.11.10	25.42. B	2
<i>Ad dorsum Ceti sequens</i>	11.13. 5 f.	15.46. A	3
<i>In Ventre Ceti borea</i>	11.18.48	20.19. A	3
<i>Nodus lini</i> ✕	11.26.10 f.	9. 4. f.A	3
<i>Cinguli Andromeda australis</i>	11.27.12	25.59. B	2

Canon Triangulorum Logarithmicus

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

CANON
TRIANGULORUM
LOGARITHMICUS.

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

Canon Triangulorum Logarithmicus.

O.					I.				
M	SIN.	Co-fin.	TAN.	Co-tan.	SIN.	Co-fin.	TAN.	Co-tan.	M
0	0.000000	10.000000	0.000000	Infinita.	8.241855	9.999934	8.241921	11.758079	60
1	6.463726	10.000000	6.463726	13.536274	8.249033	9.999932	8.249102	11.750898	59
2	6.764756	10.000000	6.764756	13.235244	8.256094	9.999929	8.256165	11.743835	58
3	6.940847	10.000000	6.940847	13.059153	8.263042	9.999927	8.263115	11.736885	57
4	7.055786	10.000000	7.055786	12.934214	8.269881	9.999925	8.269956	11.730044	56
5	7.162696	10.000000	7.162696	12.837304	8.276614	9.999922	8.276691	11.723309	55
6	7.241877	9.999999	7.241878	12.758122	8.283243	9.999920	8.283323	11.716677	54
7	7.308824	9.999999	7.308825	12.691175	8.289773	9.999918	8.289856	11.710144	53
8	7.366816	9.999999	7.366817	12.633183	8.296207	9.999915	8.296292	11.703708	52
9	7.417963	9.999999	7.417970	12.582630	8.302546	9.999913	8.302634	11.697366	51
10	7.463726	9.999998	7.463727	12.536273	8.308794	9.999910	8.308884	11.691116	50
11	7.505118	9.999998	7.505120	12.494880	8.314954	9.999907	8.315046	11.684954	49
12	7.542906	9.999997	7.542909	12.457091	8.321027	9.999905	8.321122	11.678878	48
13	7.577668	9.999997	7.577672	12.422328	8.327016	9.999902	8.327114	11.672886	47
14	7.609853	9.999996	7.609857	12.390143	8.332924	9.999899	8.333025	11.666975	46
15	7.639816	9.999995	7.639820	12.360180	8.338753	9.999897	8.338856	11.661144	45
16	7.667845	9.999995	7.667849	12.332151	8.344504	9.999894	8.344610	11.655390	44
17	7.694173	9.999995	7.694179	12.305821	8.350181	9.999891	8.350289	11.649711	43
18	7.718997	9.999994	7.719003	12.280995	8.355783	9.999888	8.355895	11.644105	42
19	7.742478	9.999993	7.742485	12.257511	8.361315	9.999885	8.361430	11.638570	41
20	7.764754	9.999993	7.764761	12.235239	8.366777	9.999882	8.366895	11.633105	40
21	7.785943	9.999992	7.785951	12.214049	8.372171	9.999879	8.372292	11.627708	39
22	7.806146	9.999991	7.806155	12.193845	8.377499	9.999876	8.377622	11.622378	38
23	7.825451	9.999990	7.825460	12.174540	8.382762	9.999873	8.382889	11.617111	37
24	7.843934	9.999989	7.843944	12.156056	8.387962	9.999870	8.388092	11.611908	36
25	7.861662	9.999989	7.861674	12.138326	8.393101	9.999867	8.393234	11.606766	35
26	7.878695	9.999988	7.878708	12.121292	8.398179	9.999864	8.398315	11.601685	34
27	7.895085	9.999987	7.895099	12.104901	8.403199	9.999861	8.403338	11.596662	33
28	7.910879	9.999986	7.910894	12.089106	8.408161	9.999858	8.408304	11.591696	32
29	7.926119	9.999985	7.926134	12.073866	8.413068	9.999854	8.413213	11.586787	31
30	7.940842	9.999983	7.940858	12.059142	8.417919	9.999851	8.418068	11.581932	30
Co-fin. SIN. Co-tan. TAN.					Co-fin. SIN. Co-tan. TAN.				

89.

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Canon Triangulorum Logarithmicus.

O.					I.				
M	SIN.	Co-fin.	TAN.	Co-tan.	SIN.	Co-fin.	TAN.	Co-tan.	M
30	7.940842	9.999983	7.940858	12.059142	8.417919	9.999851	8.418068	11.581932	30
31	7.955082	9.999982	7.955100	12.044900	8.422717	9.999848	8.422869	11.577131	29
32	7.968870	9.999981	7.968889	12.031111	8.427462	9.999844	8.427618	11.572382	28
33	7.982233	9.999980	7.982253	12.017747	8.432156	9.999841	8.432315	11.567685	27
34	7.995198	9.999979	7.995219	12.004781	8.436800	9.999838	8.436962	11.563038	26
35	8.007787	9.999977	8.007809	11.992191	8.441394	9.999834	8.441560	11.558440	25
36	8.020021	9.999976	8.020044	11.979956	8.445941	9.999831	8.446110	11.553890	24
37	8.031919	9.999975	8.031945	11.968055	8.450440	9.999827	8.450613	11.549387	23
38	8.043501	9.999973	8.043527	11.956473	8.454893	9.999824	8.455070	11.544930	22
39	8.054781	9.999972	8.054809	11.945191	8.459301	9.999820	8.459481	11.540512	21
40	8.065776	9.999971	8.065806	11.934124	8.463665	9.999816	8.463849	11.536135	20
41	8.076500	9.999969	8.076531	11.923269	8.467985	9.999813	8.468172	11.531810	19
42	8.086965	9.999968	8.086997	11.913003	8.472263	9.999809	8.472454	11.527546	18
43	8.097183	9.999966	8.097217	11.902783	8.476498	9.999805	8.476693	11.523307	17
44	8.107167	9.999964	8.107203	11.892797	8.480693	9.999801	8.480892	11.519108	16
45	8.116926	9.999963	8.116963	11.883037	8.484848	9.999797	8.485050	11.514950	15
46	8.126471	9.999961	8.126510	11.873490	8.488963	9.999794	8.489170	11.510830	14
47	8.135810	9.999959	8.135851	11.864149	8.493040	9.999790	8.493250	11.506750	13
48	8.144953	9.999958	8.144996	11.855004	8.497078	9.999786	8.497293	11.502707	12
49	8.153907	9.999956	8.153952	11.846048	8.501080	9.999782	8.501298	11.498701	11
50	8.162681	9.999954	8.162727	11.837273	8.505045	9.999778	8.505267	11.494733	10
51	8.171280	9.999952	8.171328	11.828671	8.508974	9.999774	8.509200	11.490800	9
52	8.179713	9.999950	8.179763	11.820237	8.512867	9.999769	8.513098	11.486901	8
53	8.187985	9.999948	8.188036	11.811964	8.516726	9.999765	8.516961	11.483039	7
54	8.196102	9.999946	8.196156	11.803824	8.520551	9.999761	8.520790	11.479210	6
55	8.204070	9.999944	8.204126	11.795874	8.524343	9.999757	8.524586	11.475414	5
56	8.211895	9.999942	8.211953	11.788017	8.528102	9.999753	8.528349	11.471651	4
57	8.219581	9.999940	8.219641	11.780359	8.531828	9.999748	8.532080	11.467920	3
58	8.227134	9.999938	8.227195	11.772805	8.535523	9.999744	8.535779	11.464221	2
59	8.234557	9.999936	8.234621	11.765379	8.539186	9.999740	8.539447	11.460558	1
60	8.241855	9.999934	8.241921	11.758079	8.542819	9.999735	8.543084	11.456916	0
	Co-fin.	SIN.	Co-tan.	TAN.	Co-fin.	SIN.	Co-tan.	TAN.	M

89.

88.

Canon Triangulorum Logarithmicus.

2.					3.				
M	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	M
0	8.542819	9.999735	8.543084	11.456916	8.718800	9.999404	8.719396	11.280604	60
1	8.546411	9.999731	8.546691	11.453309	8.721204	9.999398	8.721806	11.278194	59
2	8.549995	9.999726	8.550268	11.449732	8.723595	9.999391	8.724204	11.275796	58
3	8.553539	9.999722	8.553817	11.446183	8.725972	9.999384	8.726588	11.273412	57
4	8.557054	9.999717	8.557336	11.442664	8.728337	9.999378	8.728959	11.271041	56
5	8.560540	9.999713	8.560828	11.439172	8.730688	9.999371	8.731317	11.268683	55
6	8.563999	9.999708	8.564291	11.435709	8.733027	9.999364	8.733663	11.266337	54
7	8.567431	9.999704	8.567727	11.432273	8.735354	9.999357	8.735996	11.264004	53
8	8.570836	9.999699	8.571137	11.428863	8.737667	9.999350	8.738317	11.261683	52
9	8.574214	9.999694	8.574520	11.425480	8.739969	9.999343	8.740626	11.259374	51
10	8.577566	9.999689	8.577877	11.422123	8.742259	9.999336	8.742922	11.257078	50
11	8.580892	9.999685	8.581208	11.418792	8.744536	9.999329	8.745207	11.254793	49
12	8.584193	9.999680	8.584514	11.415486	8.746802	9.999322	8.747479	11.252521	48
13	8.587469	9.999675	8.587795	11.412205	8.749055	9.999315	8.749740	11.250260	47
14	8.590721	9.999670	8.591051	11.408949	8.751297	9.999308	8.751989	11.248011	46
15	8.593948	9.999665	8.594283	11.405717	8.753528	9.999301	8.754227	11.245773	45
16	8.597152	9.999660	8.597492	11.402508	8.755747	9.999294	8.756453	11.243547	44
17	8.600332	9.999655	8.600677	11.399323	8.757955	9.999287	8.758668	11.241332	43
18	8.603489	9.999650	8.603839	11.396161	8.760151	9.999279	8.760872	11.239128	42
19	8.606623	9.999645	8.606978	11.393022	8.762337	9.999272	8.763065	11.236935	41
20	8.609734	9.999640	8.610094	11.389906	8.764511	9.999265	8.765246	11.234754	40
21	8.612823	9.999635	8.613189	11.386811	8.766675	9.999257	8.767417	11.232583	39
22	8.615891	9.999629	8.616262	11.383738	8.768828	9.999250	8.769578	11.230422	38
23	8.618937	9.999624	8.619313	11.380687	8.770970	9.999242	8.771727	11.228273	37
24	8.621962	9.999619	8.622343	11.377657	8.773101	9.999235	8.773866	11.226134	36
25	8.624965	9.999614	8.625352	11.374648	8.775223	9.999227	8.775995	11.224005	35
26	8.627948	9.999608	8.628340	11.371660	8.777333	9.999220	8.778114	11.221886	34
27	8.630911	9.999603	8.631308	11.368692	8.779434	9.999212	8.780222	11.219778	33
28	8.633854	9.999597	8.634256	11.365744	8.781524	9.999205	8.782320	11.217680	32
29	8.636776	9.999592	8.637184	11.362816	8.783605	9.999197	8.784408	11.215592	31
30	8.639680	9.999586	8.640093	11.359907	8.785675	9.999189	8.786486	11.213514	30
	Co-fin.	S I N.	Co-tan.	T A N.	Co-fin.	S I N.	Co-tan.	T A N.	M

Canon Triangulorum Logarithmicus.

2.

	S I N.	Co-fin.	T A N.	Co-tan.
30	8.639680	9.999586	8.640093	11.359907
31	8.642563	9.999581	8.642982	11.357018
32	8.645428	9.999575	8.645853	11.354147
33	8.648274	9.999570	8.648704	11.351296
34	8.651102	9.999564	8.651537	11.348463
35	8.653911	9.999558	8.654352	11.345648
36	8.656702	9.999553	8.657149	11.342851
37	8.659475	9.999547	8.659928	11.340072
38	8.662230	9.999541	8.662689	11.337311
39	8.664968	9.999535	8.665433	11.334567
40	8.667689	9.999529	8.668160	11.331840
41	8.670393	9.999524	8.670870	11.329130
42	8.673080	9.999518	8.673563	11.326437
43	8.675751	9.999512	8.676239	11.323761
44	8.678405	9.999506	8.678900	11.321100
45	8.681043	9.999500	8.681544	11.318456
46	8.683665	9.999493	8.684172	11.315828
47	8.686272	9.999487	8.686784	11.313216
48	8.688863	9.999481	8.689381	11.310619
49	8.691438	9.999475	8.691963	11.308037
50	8.693998	9.999469	8.694529	11.305471
51	8.696543	9.999463	8.697081	11.302919
52	8.699073	9.999456	8.699617	11.300383
53	8.701589	9.999450	8.702139	11.297861
54	8.704090	9.999443	8.704646	11.295354
55	8.706577	9.999437	8.707140	11.292860
56	8.709049	9.999431	8.709618	11.290382
57	8.711507	9.999424	8.712083	11.287917
58	8.713952	9.999418	8.714534	11.285466
59	8.716383	9.999411	8.716972	11.283028
60	8.718800	9.999404	8.719396	11.280604
	Co-fin.	S I N.	Co-tan.	T A N.

87.

2.

	S I N.	Co-fin.	T A N.	Co-tan.
30	8.785675	9.999189	8.785486	11.213514
31	8.787736	9.999181	8.788554	11.211446
32	8.789787	9.999174	8.790613	11.209387
33	8.791828	9.999166	8.792662	11.207338
34	8.793859	9.999158	8.794701	11.205299
35	8.795881	9.999150	8.796731	11.203269
36	8.797894	9.999142	8.798752	11.201248
37	8.799897	9.999134	8.800763	11.199237
38	8.801892	9.999126	8.802765	11.197235
39	8.803876	9.999118	8.804758	11.195242
40	8.805852	9.999110	8.806742	11.193259
41	8.807819	9.999102	8.808717	11.191283
42	8.809777	9.999094	8.810683	11.189317
43	8.811726	9.999086	8.812641	11.187359
44	8.813667	9.999077	8.814589	11.185411
45	8.815599	9.999069	8.816529	11.183471
46	8.817522	9.999061	8.818461	11.181539
47	8.819436	9.999053	8.820384	11.179616
48	8.821343	9.999044	8.822298	11.177702
49	8.823240	9.999036	8.824205	11.175795
50	8.825130	9.999027	8.826103	11.173897
51	8.827011	9.999019	8.827992	11.172008
52	8.828884	9.999010	8.829874	11.170126
53	8.830749	9.999002	8.831748	11.168252
54	8.832607	9.998993	8.833613	11.166387
55	8.834456	9.998984	8.835471	11.164529
56	8.836297	9.998976	8.837321	11.162679
57	8.838130	9.998967	8.839163	11.160837
58	8.839956	9.998958	8.840998	11.159002
59	8.841774	9.998950	8.842825	11.157175
60	8.843585	9.998941	8.844644	11.155356
	Co-fin.	S I N.	Co-tan.	T A N.

86.

Canon Triangulorum Logarithmicus.

4.					5.				
	S I N.	Co-fin.	T A N.	Co tan.		S I N.	Co-fin.	T A N.	Co-tan.
0	8.843585	9.998941	8.844644	II.155356	8.940296	9.998344	8.941952	II.058048	60
1	8.845387	9.998932	8.846455	II.155345	8.941738	9.998333	8.943404	II.056596	59
2	8.847183	9.998923	8.848260	II.1551740	8.943174	9.998322	8.944852	II.055148	58
3	8.848971	9.998914	8.850057	II.149943	8.944606	9.998311	8.946295	II.053705	57
4	8.850751	9.998905	8.851845	II.148154	8.946034	9.998300	8.947734	II.052266	56
5	8.852525	9.998896	8.853628	II.146372	8.947456	9.998289	8.949168	II.050832	55
6	8.854291	9.998887	8.855403	II.144597	8.948874	9.998277	8.950597	II.049403	54
7	8.856049	9.998878	8.857171	II.142829	8.950287	9.998266	8.952021	II.047979	53
8	8.857801	9.998869	8.858932	II.141068	8.951696	9.998255	8.953441	II.046559	52
9	8.859546	9.998860	8.860786	II.139314	8.953100	9.998243	8.954856	II.045144	51
10	8.861283	9.998851	8.862433	II.137557	8.954499	9.998232	8.956267	II.043733	50
11	8.863014	9.998841	8.864173	II.135827	8.955894	9.998220	8.957674	II.042326	49
12	8.864738	9.998832	8.865905	II.134094	8.957284	9.998209	8.959075	II.040925	48
13	8.866455	9.998823	8.867632	II.132368	8.958670	9.998197	8.960473	II.039527	47
14	8.868165	9.998813	8.869351	II.130649	8.960052	9.998186	8.961866	II.038134	46
15	8.869868	9.998804	8.871054	II.128936	8.961429	9.998174	8.963255	II.036745	45
16	8.871565	9.998795	8.872770	II.127230	8.962801	9.998163	8.964639	II.035361	44
17	8.873255	9.998785	8.874469	II.125531	8.964170	9.998151	8.966019	II.033981	43
18	8.874938	9.998776	8.876162	II.123838	8.965534	9.998139	8.967394	II.032606	42
19	8.876615	9.998766	8.877849	II.122151	8.966893	9.998128	8.968766	II.031234	41
20	8.878285	9.998757	8.879529	II.120471	8.968249	9.998116	8.970133	II.029867	40
21	8.879949	9.998747	8.881202	II.118798	8.969600	9.998104	8.971496	II.028504	39
22	8.881607	9.998738	8.882869	II.117131	8.970947	9.998092	8.972855	II.027145	38
23	8.883258	9.998728	8.884530	II.115470	8.972289	9.998080	8.974209	II.025791	37
24	8.884903	9.998718	8.886185	II.113815	8.973628	9.998068	8.975560	II.024440	36
25	8.886542	9.998708	8.887833	II.112167	8.974962	9.998056	8.976906	II.023094	35
26	8.888174	9.998699	8.889476	II.110524	8.976293	9.998044	8.978248	II.021752	34
27	8.889801	9.998689	8.891112	II.108888	8.977619	9.998032	8.979586	II.020411	33
28	8.891421	9.998679	8.892742	II.107258	8.978941	9.998020	8.980921	II.019079	32
29	8.893035	9.998669	8.894366	II.105634	8.980259	9.998008	8.982251	II.017749	31
30	8.894643	9.998659	8.895984	II.104016	8.981573	9.997996	8.983577	II.016423	30
	Co-fin.	S I N.	Co-tan.	T A N.		Co-fin.	S I N.	Co-tan.	T A N.
85.					84.				

Canon Triangulorum Logarithmicus.

4.					5.				
M	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	
30	8.894643	9.998555	8.895984	II.104016	8.981573	9.997996	8.983577	II.014223	
31	8.896246	9.998649	8.897596	II.102404	8.982883	9.997974	8.984899	II.015101	
32	8.897842	9.998639	8.899203	II.100797	8.984189	9.997972	8.986217	II.013783	
33	8.899432	9.998629	8.900803	II.099197	8.985491	9.997959	8.987532	II.012468	
34	8.901017	9.998619	8.902398	II.097602	8.986789	9.997947	8.988842	II.011158	
35	8.902596	9.998609	8.903987	II.096013	8.988083	9.997935	8.990149	II.009851	
36	8.904169	9.998599	8.905570	II.094430	8.989374	9.997922	8.991451	II.008549	
37	8.905736	9.998589	8.907147	II.092853	8.990660	9.997910	8.992750	II.007250	
38	8.907297	9.998578	8.908719	II.091281	8.991943	9.997897	8.994045	II.005955	
39	8.908853	9.998568	8.910285	II.089715	8.993222	9.997885	8.995337	II.004663	
40	8.910404	9.998558	8.911846	II.088154	8.994497	9.997872	8.996624	II.003376	
41	8.911949	9.998548	8.913401	II.086599	8.995768	9.997860	8.997908	II.002092	
42	8.913488	9.998537	8.914951	II.085049	8.997036	9.997847	8.999188	II.000812	
43	8.915022	9.998527	8.916495	II.083505	8.998299	9.997835	9.000465	II.999535	
44	8.916550	9.998516	8.918034	II.081966	8.999560	9.997822	9.001738	II.998262	
45	8.918073	9.998506	8.919568	II.080432	9.000816	9.997809	9.003007	II.996993	
46	8.919591	9.998495	8.921096	II.078904	9.002069	9.997797	9.004272	II.995728	
47	8.921103	9.998485	8.922619	II.077381	9.003318	9.997784	9.005534	II.994466	
48	8.922610	9.998474	8.924136	II.075864	9.004563	9.997771	9.006792	II.993208	
49	8.924112	9.998464	8.925649	II.074351	9.005805	9.997758	9.008047	II.991953	
50	8.925609	9.998453	8.927156	II.072844	9.007044	9.997745	9.009298	II.990702	
51	8.927100	9.998443	8.928658	II.071342	9.008278	9.997732	9.010546	II.989454	
52	8.928587	9.998432	8.930155	II.069845	9.009510	9.997719	9.011790	II.988210	
53	8.930068	9.998422	8.931647	II.068353	9.010737	9.997706	9.013031	II.986969	
54	8.931544	9.998411	8.933134	II.066866	9.011962	9.997693	9.014268	II.985732	
55	8.933015	9.998401	8.934616	II.065384	9.013182	9.997680	9.015502	II.984498	
56	8.934481	9.998390	8.936093	II.063907	9.014407	9.997667	9.016732	II.983268	
57	8.935942	9.998379	8.937565	II.062435	9.015613	9.997654	9.017959	II.982041	
58	8.937398	9.998368	8.939032	II.060968	9.016824	9.997641	9.019183	II.980817	
59	8.938850	9.998355	8.940494	II.059506	9.018031	9.997628	9.020403	II.979597	
60	8.940296	9.998344	8.941952	II.058048	9.019235	9.997614	9.021620	II.978380	
	Co-fin.	S I N.	Co-tan.	T A N.	Co-fin.	S I N.	Co-tan.	T A N.	

Canon Triangulorum Logarithmicus.

6.				7.					
S I N.	Co-fin.	T A N.	Co tan.	S I N.	Co-fin.	T A N.	Co-tan.		
1	9.019235	9.997614	9.021620	10.978380	9.085894	9.996751	9.089144	10.910856	60
2	9.020435	9.997601	9.022834	10.977166	9.086922	9.996735	9.090187	10.909813	59
3	9.021632	9.997588	9.024044	10.975956	9.087947	9.996720	9.091228	10.908772	58
4	9.022825	9.997574	9.025251	10.974747	9.088970	9.996704	9.092266	10.907734	57
5	9.024016	9.997561	9.026455	10.973545	9.089990	9.996688	9.093302	10.906698	56
6	9.025203	9.997547	9.027655	10.972345	9.091008	9.996673	9.094336	10.905664	55
7	9.026386	9.997534	9.028852	10.971148	9.092024	9.996657	9.095367	10.904633	54
8	9.027567	9.997520	9.030046	10.969954	9.093037	9.996641	9.096395	10.903605	53
9	9.028744	9.997507	9.031237	10.968763	9.094047	9.996625	9.097422	10.902578	52
10	9.029918	9.997493	9.032425	10.967575	9.095056	9.996610	9.098446	10.901554	51
11	9.031089	9.997480	9.033609	10.966391	9.096062	9.996594	9.099468	10.900532	50
12	9.032257	9.997466	9.034791	10.965209	9.097065	9.996578	9.100487	10.899513	49
13	9.033421	9.997452	9.035969	10.964031	9.098066	9.996562	9.101504	10.898496	48
14	9.034582	9.997439	9.037144	10.962856	9.099065	9.996546	9.102519	10.897481	47
15	9.035741	9.997425	9.038316	10.961684	9.100062	9.996530	9.103532	10.896468	46
16	9.036895	9.997411	9.039485	10.960515	9.101056	9.996514	9.104542	10.895458	45
17	9.038048	9.997397	9.040651	10.959349	9.102048	9.996498	9.105550	10.894450	44
18	9.039197	9.997383	9.041813	10.958187	9.103037	9.996482	9.106556	10.893444	43
19	9.040342	9.997369	9.042973	10.957027	9.104025	9.996465	9.107559	10.892441	42
20	9.041485	9.997355	9.044130	10.955870	9.105010	9.996449	9.108560	10.891440	41
21	9.042625	9.997341	9.045284	10.954716	9.105992	9.996433	9.109559	10.890441	40
22	9.043762	9.997327	9.046434	10.953566	9.106973	9.996417	9.110556	10.889444	39
23	9.044895	9.997313	9.047582	10.952418	9.107951	9.996400	9.111551	10.888449	38
24	9.046026	9.997299	9.048727	10.951273	9.108927	9.996384	9.112543	10.887457	37
25	9.047154	9.997285	9.049869	10.950131	9.109901	9.996368	9.113533	10.886467	36
26	9.048279	9.997271	9.051008	10.948992	9.110873	9.996351	9.114521	10.885479	35
27	9.049400	9.997257	9.052144	10.947856	9.111842	9.996335	9.115507	10.884493	34
28	9.050515	9.997242	9.053277	10.946723	9.112809	9.996318	9.116491	10.883509	33
29	9.051635	9.997228	9.054407	10.945593	9.113774	9.996302	9.117472	10.882528	32
30	9.052749	9.997214	9.055535	10.944465	9.114737	9.996285	9.118452	10.881548	31
	9.053859	9.997199	9.056659	10.943341	9.115698	9.996269	9.119429	10.880571	30
Co-fin.	S I N.	Co-tan.	T A N.	Co-fin.	S I N.	Co-tan.	T A N.		

83.

7.				
S I N.	Co-fin.	T A N.	Co-tan.	
9.085894	9.996751	9.089144	10.910856	60
9.086922	9.996735	9.090187	10.909813	59
9.087947	9.996720	9.091228	10.908772	58
9.088970	9.996704	9.092266	10.907734	57
9.089990	9.996688	9.093302	10.906698	56
9.091008	9.996673	9.094336	10.905664	55
9.092024	9.996657	9.095367	10.904633	54
9.093037	9.996641	9.096395	10.903605	53
9.094047	9.996625	9.097422	10.902578	52
9.095056	9.996610	9.098446	10.901554	51
9.096062	9.996594	9.099468	10.900532	50
9.097065	9.996578	9.100487	10.899513	49
9.098066	9.996562	9.101504	10.898496	48
9.099065	9.996546	9.102519	10.897481	47
9.100062	9.996530	9.103532	10.896468	46
9.101056	9.996514	9.104542	10.895458	45
9.102048	9.996498	9.105550	10.894450	44
9.103037	9.996482	9.106556	10.893444	43
9.104025	9.996465	9.107559	10.892441	42
9.105010	9.996449	9.108560	10.891440	41
9.105992	9.996433	9.109559	10.890441	40
9.106973	9.996417	9.110556	10.889444	39
9.107951	9.996400	9.111551	10.888449	38
9.108927	9.996384	9.112543	10.887457	37
9.109901	9.996368	9.113533	10.886467	36
9.110873	9.996351	9.114521	10.885479	35
9.111842	9.996335	9.115507	10.884493	34
9.112809	9.996318	9.116491	10.883509	33
9.113774	9.996302	9.117472	10.882528	32
9.114737	9.996285	9.118452	10.881548	31
9.115698	9.996269	9.119429	10.880571	30
Co-fin.	S I N.	Co-tan.	T A N.	M

82.

Canon Triangulorum Logarithmicus.

6.

M	S I N.	Co-fin.	TAN.	Co-tan.
30	9.053859	9.997199	9.056659	10.943341
31	9.054966	9.997185	9.057781	10.942219
32	9.056071	9.997170	9.058900	10.941100
33	9.057172	9.997156	9.060016	10.939984
34	9.058271	9.997141	9.061130	10.938870
35	9.059367	9.997127	9.062240	10.937760
36	9.060460	9.997112	9.063348	10.936652
37	9.061551	9.997098	9.064453	10.935547
38	9.062639	9.997083	9.065556	10.934444
39	9.063724	9.997068	9.066655	10.933345
40	9.064806	9.997053	9.067752	10.932248
41	9.065885	9.997039	9.068846	10.931153
42	9.066962	9.997024	9.069938	10.930052
43	9.068036	9.997009	9.071027	10.928973
44	9.069107	9.996994	9.072113	10.927887
45	9.070176	9.996979	9.073197	10.926803
46	9.071242	9.996964	9.074278	10.925722
47	9.072306	9.996949	9.075356	10.924644
48	9.073366	9.996934	9.076432	10.923568
49	9.074424	9.996919	9.077505	10.922495
50	9.075480	9.996904	9.078576	10.921424
51	9.076533	9.996889	9.079644	10.920356
52	9.077583	9.996874	9.080710	10.919290
53	9.078631	9.996858	9.081773	10.918227
54	9.079676	9.996843	9.082833	10.917167
55	9.080719	9.996828	9.083891	10.916109
56	9.081759	9.996812	9.084947	10.915053
57	9.082797	9.996797	9.086000	10.914000
58	9.083832	9.996782	9.087050	10.912950
59	9.084864	9.996766	9.088098	10.911902
60	9.085894	9.996751	9.089144	10.910856
	Co-fin.	S I N.	Co-tan.	TAN.

83.

7.

S I N.	Co-fin.	TAN.	Co-tan.	M
9.115698	9.996269	9.119429	10.880571	30
9.116656	9.996252	9.120404	10.879596	29
9.117613	9.996235	9.121377	10.878623	28
9.118567	9.996219	9.122348	10.877652	27
9.119519	9.996202	9.123317	10.876683	26
9.120469	9.996185	9.124284	10.875716	25
9.121417	9.996168	9.125249	10.874751	24
9.122362	9.996151	9.126211	10.873789	23
9.123306	9.996134	9.127172	10.872828	22
9.124248	9.996117	9.128130	10.871870	21
9.125187	9.996100	9.129087	10.870913	20
9.126125	9.996083	9.130041	10.869959	19
9.127060	9.996066	9.130994	10.869006	18
9.127993	9.996049	9.131944	10.868056	17
9.128925	9.996032	9.132893	10.867107	16
9.129854	9.996015	9.133839	10.866161	15
9.130781	9.995998	9.134784	10.865216	14
9.131706	9.995980	9.135726	10.864274	13
9.132630	9.995963	9.136667	10.863333	12
9.133551	9.995946	9.137605	10.862395	11
9.134470	9.995928	9.138542	10.861458	10
9.135387	9.995911	9.139476	10.860524	9
9.136303	9.995894	9.140409	10.859591	8
9.137216	9.995876	9.141342	10.858660	7
9.138128	9.995859	9.142269	10.857731	6
9.139037	9.995841	9.143196	10.856805	5
9.139944	9.995823	9.144121	10.855879	4
9.140850	9.995806	9.145044	10.854956	3
9.141754	9.995788	9.145966	10.854034	2
9.142655	9.995771	9.146885	10.853115	1
9.143555	9.995753	9.147803	10.852197	0
Co-fin.	S I N.	Co-tan.	TAN.	M

82.

Canon Triangulorum Logarithmicus.

8.				9.				
M	S I N.	Co-fin.	T A N.	Co tan.	S I N.	Co-fin.	T A N.	Co-tan.
0	9.143555	9.995753	9.147803	10.852197	9.194332	9.994620	9.199713	10.800287
1	9.144453	9.995735	9.148718	10.851282	9.195129	9.994600	9.200529	10.799471
2	9.145349	9.995717	9.149632	10.850368	9.195925	9.994580	9.201345	10.798655
3	9.146243	9.995699	9.150544	10.849456	9.196719	9.994560	9.202159	10.797841
4	9.147136	9.995681	9.151454	10.848546	9.197511	9.994540	9.202971	10.797029
5	9.148026	9.995664	9.152363	10.847637	9.198302	9.994519	9.203782	10.796218
6	9.148915	9.995646	9.153269	10.846731	9.199091	9.994499	9.204592	10.795408
7	9.149802	9.995628	9.154174	10.845826	9.199879	9.994479	9.205400	10.794600
8	9.150686	9.995610	9.155077	10.844923	9.200666	9.994459	9.206207	10.793793
9	9.151569	9.995591	9.155978	10.844022	9.201451	9.994438	9.207013	10.792987
10	9.152451	9.995573	9.156877	10.843123	9.202234	9.994418	9.207817	10.792183
11	9.153330	9.995555	9.157775	10.842225	9.203017	9.994398	9.208619	10.791381
12	9.154208	9.995537	9.158671	10.841329	9.203797	9.994377	9.209420	10.790580
13	9.155083	9.995519	9.159565	10.840435	9.204577	9.994357	9.210220	10.789780
14	9.155957	9.995501	9.160457	10.839543	9.205354	9.994336	9.211018	10.788982
15	9.156830	9.995482	9.161347	10.838653	9.206131	9.994316	9.211815	10.788185
16	9.157700	9.995464	9.162236	10.837764	9.206906	9.994295	9.212611	10.787389
17	9.158569	9.995446	9.163123	10.836877	9.207679	9.994274	9.213405	10.786595
18	9.159435	9.995427	9.164008	10.835992	9.208452	9.994254	9.214198	10.785802
19	9.160301	9.995409	9.164892	10.835108	9.209222	9.994233	9.214989	10.785011
20	9.161164	9.995390	9.165774	10.834226	9.209992	9.994212	9.215780	10.784220
21	9.162025	9.995372	9.166654	10.833346	9.210760	9.994191	9.216568	10.783432
22	9.162885	9.995353	9.167532	10.832468	9.211526	9.994171	9.217356	10.782644
23	9.163743	9.995334	9.168409	10.831591	9.212291	9.994150	9.218142	10.781858
24	9.164600	9.995316	9.169284	10.830716	9.213055	9.994129	9.218926	10.781074
25	9.165454	9.995297	9.170157	10.829843	9.213818	9.994108	9.219710	10.780290
26	9.166307	9.995278	9.171029	10.828971	9.214579	9.994087	9.220492	10.779508
27	9.167159	9.995260	9.171899	10.828101	9.215338	9.994066	9.221272	10.778728
28	9.168008	9.995241	9.172767	10.827233	9.216097	9.994045	9.222052	10.777948
29	9.168856	9.995222	9.173634	10.826366	9.216854	9.994024	9.222830	10.777170
30	9.169702	9.995203	9.174499	10.825501	9.217609	9.994003	9.223607	10.776393
Co-fin. S I N. Co-tan. T A N.				Co-fin. S I N. Co-tan. T A N. M				

81.

80.

81.

80.

Canon Triangulorum Logarithmicus.

8.

M.	SIN.	Co-fin.	TAN.	Co-tan.
30	9.169702	9.995203	9.174499	10.825501
31	9.170547	9.995184	9.175362	10.824638
32	9.171389	9.995165	9.176224	10.823776
33	9.172230	9.995146	9.177084	10.822916
34	9.173070	9.995127	9.177942	10.822058
35	9.173908	9.995108	9.178799	10.821201
36	9.174744	9.995089	9.179655	10.820345
37	9.175578	9.995070	9.180508	10.819492
38	9.176411	9.995051	9.181360	10.818640
39	9.177242	9.995032	9.182211	10.817789
40	9.178072	9.995013	9.183059	10.816941
41	9.178900	9.994993	9.183907	10.816093
42	9.179726	9.994974	9.184752	10.815248
43	9.180551	9.994955	9.185597	10.814403
44	9.181374	9.994935	9.186439	10.813561
45	9.182196	9.994916	9.187280	10.812720
46	9.183016	9.994896	9.188120	10.811880
47	9.183834	9.994877	9.188958	10.811042
48	9.184651	9.994857	9.189794	10.810206
49	9.185466	9.994838	9.190629	10.809371
50	9.186280	9.994818	9.191462	10.808538
51	9.187092	9.994798	9.192294	10.807706
52	9.187903	9.994779	9.193124	10.806876
53	9.188712	9.994759	9.193953	10.806047
54	9.189519	9.994739	9.194780	10.805220
55	9.190325	9.994720	9.195606	10.804394
56	9.191130	9.994700	9.196430	10.803570
57	9.191933	9.994680	9.197253	10.802747
58	9.192734	9.994660	9.198074	10.801926
59	9.193534	9.994640	9.198894	10.801106
60	9.194332	9.994620	9.199713	10.800287
	Co-fin.	SIN.	Co-tan.	TAN.

81.

9.

SIN.	Co-fin.	TAN.	Co-tan.
9.217609	9.994003	9.223607	10.776393
9.218363	9.993982	9.224382	10.775618
9.219116	9.993960	9.225156	10.774844
9.219868	9.993939	9.225929	10.774071
9.220618	9.993918	9.226700	10.773300
9.221367	9.993897	9.227471	10.772529
9.222115	9.993875	9.228239	10.771761
9.222861	9.993854	9.229007	10.770993
9.223606	9.993832	9.229773	10.770227
9.224349	9.993811	9.230539	10.769461
9.225092	9.993789	9.231302	10.768698
9.225833	9.993768	9.232065	10.767935
9.226573	9.993746	9.232826	10.767174
9.227311	9.993725	9.233586	10.766414
9.228048	9.993703	9.234345	10.765655
9.228784	9.993681	9.235103	10.764897
9.229518	9.993660	9.235859	10.764141
9.230252	9.993638	9.236614	10.763386
9.230984	9.993616	9.237368	10.762632
9.231715	9.993594	9.238120	10.761880
9.232444	9.993572	9.238872	10.761128
9.233172	9.993550	9.239622	10.760378
9.233899	9.993528	9.240371	10.759629
9.234625	9.993506	9.241118	10.758882
9.235349	9.993484	9.241855	10.758135
9.236073	9.993462	9.242610	10.757390
9.236795	9.993440	9.243354	10.756646
9.237515	9.993418	9.244077	10.755903
9.238235	9.993396	9.244839	10.755161
9.238953	9.993374	9.245579	10.754421
9.239670	9.993351	9.246319	10.753681
Co-fin.	SIN.	Co-tan.	TAN.

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Canon Triangulorum Logarithmicus.

IO.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.239670	9.993351	9.246319	10.753681
1	9.240386	9.993329	9.247057	10.752943
2	9.241101	9.993307	9.247794	10.752205
3	9.241814	9.993284	9.248530	10.751470
4	9.242526	9.993262	9.249264	10.750736
5	9.243237	9.993240	9.249998	10.750002
6	9.243947	9.993217	9.250730	10.749270
7	9.244656	9.993195	9.251461	10.748539
8	9.245363	9.993172	9.252191	10.747809
9	9.246069	9.993149	9.252920	10.747080
10	9.246775	9.993127	9.253648	10.746352
11	9.247478	9.993104	9.254374	10.745626
12	9.248181	9.993081	9.255100	10.744900
13	9.248883	9.993059	9.255824	10.744176
14	9.249583	9.993036	9.256547	10.743453
15	9.250282	9.993013	9.257269	10.742731
16	9.250980	9.992990	9.257990	10.742010
17	9.251677	9.992967	9.258710	10.741290
18	9.252373	9.992944	9.259429	10.740571
19	9.253067	9.992921	9.260146	10.739854
20	9.253761	9.992898	9.260863	10.739137
21	9.254453	9.992875	9.261578	10.738422
22	9.255144	9.992852	9.262292	10.737708
23	9.255834	9.992829	9.263005	10.736995
24	9.256523	9.992806	9.263717	10.736283
25	9.257211	9.992783	9.264428	10.735572
26	9.257898	9.992759	9.265138	10.734862
27	9.258583	9.992736	9.265847	10.734153
28	9.259268	9.992713	9.266555	10.733445
29	9.259951	9.992690	9.267261	10.732739
30	9.260633	9.992666	9.267967	10.732033
	Co-fin.	S I N.	Co-tan.	T A N.

79.

II.

S I N.	Co-fin.	T A N.	Co-tan.
9.280599	9.991974	9.288652	10.711348
9.281248	9.991922	9.289326	10.710674
9.281897	9.991897	9.289999	10.710001
9.282544	9.991873	9.290671	10.709329
9.283190	9.991848	9.291342	10.708658
9.283836	9.991823	9.292013	10.707987
9.284480	9.991799	9.292682	10.707318
9.285124	9.991774	9.293350	10.706650
9.285766	9.991749	9.294017	10.705983
9.286408	9.991724	9.294684	10.705316
9.287048	9.991699	9.295349	10.704651
9.287688	9.991674	9.296013	10.703987
9.288326	9.991649	9.296677	10.703323
9.288964	9.991624	9.297339	10.702661
9.289600	9.991599	9.298001	10.702000
9.290236	9.991574	9.298662	10.701338
9.290870	9.991549	9.299322	10.700678
9.291504	9.991524	9.299980	10.700020
9.292137	9.991498	9.300638	10.699362
9.292768	9.991473	9.301295	10.698705
9.293399	9.991448	9.301951	10.698049
9.294029	9.991422	9.302607	10.697393
9.294658	9.991397	9.303261	10.696739
9.295286	9.991372	9.303914	10.696086
9.295913	9.991346	9.304567	10.695433
9.296539	9.991321	9.305218	10.694782
9.297164	9.991295	9.305869	10.694131
9.297788	9.991270	9.306519	10.693481
9.298412	9.991244	9.307168	10.692832
9.299034	9.991218	9.307816	10.692184
9.299655	9.991193	9.308463	10.691537
Co-fin.	S I N.	Co-tan.	T A N.

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Canon Triangulorum Logarithmicus.

10.					11.				
M	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	
30	9.260633	9.992666	9.267967	10.732033	9.299655	9.991193	9.308463	10.691537	
31	9.261314	9.992643	9.268671	10.731329	9.300276	9.991167	9.309109	10.690821	
32	9.261994	9.992619	9.269375	10.730625	9.300895	9.991141	9.309754	10.690246	
33	9.262673	9.992596	9.270077	10.729923	9.301514	9.991115	9.310399	10.689601	
34	9.263351	9.992572	9.270779	10.729221	9.302132	9.991090	9.311042	10.688958	
35	9.264027	9.992549	9.271479	10.728521	9.302748	9.991064	9.311685	10.688315	
36	9.264703	9.992525	9.272178	10.727822	9.303364	9.991038	9.312327	10.687673	
37	9.265377	9.992501	9.272876	10.727124	9.303979	9.991012	9.312968	10.687032	
38	9.266051	9.992478	9.273573	10.726427	9.304593	9.990986	9.313608	10.686392	
39	9.266723	9.992454	9.274269	10.725731	9.305207	9.990960	9.314247	10.685753	
40	9.267395	9.992430	9.274964	10.725036	9.305819	9.990934	9.314885	10.685115	
41	9.268065	9.992406	9.275658	10.724342	9.306430	9.990908	9.315523	10.684477	
42	9.268734	9.992382	9.276351	10.723649	9.307041	9.990882	9.316159	10.683841	
43	9.269402	9.992359	9.277043	10.722957	9.307650	9.990855	9.316795	10.683205	
44	9.270069	9.992335	9.277734	10.722266	9.308259	9.990829	9.317430	10.682570	
45	9.270735	9.992311	9.278424	10.721576	9.308867	9.990803	9.318064	10.681936	
46	9.271400	9.992287	9.279113	10.720887	9.309474	9.990777	9.318697	10.681303	
47	9.272064	9.992263	9.279801	10.720199	9.310080	9.990750	9.319330	10.680670	
48	9.272726	9.992239	9.280488	10.719512	9.310685	9.990724	9.319961	10.680039	
49	9.273388	9.992214	9.281174	10.718826	9.311289	9.990697	9.320592	10.679408	
50	9.274049	9.992190	9.281858	10.718142	9.311893	9.990671	9.321222	10.678778	
51	9.274708	9.992166	9.282542	10.717458	9.312495	9.990645	9.321851	10.678149	
52	9.275367	9.992142	9.283225	10.716775	9.313097	9.990618	9.322479	10.677521	
53	9.276025	9.992118	9.283907	10.716093	9.313698	9.990591	9.323106	10.676894	
54	9.276681	9.992093	9.284588	10.715412	9.314297	9.990565	9.323733	10.676267	
55	9.277337	9.992069	9.285268	10.714732	9.314897	9.990538	9.324358	10.675642	
56	9.277991	9.992044	9.285947	10.714053	9.315495	9.990511	9.324983	10.675017	
57	9.278645	9.992020	9.286624	10.713376	9.316092	9.990485	9.325607	10.674393	
58	9.279297	9.991996	9.287301	10.712699	9.316689	9.990458	9.326231	10.673769	
59	9.279948	9.991971	9.287977	10.712023	9.317284	9.990431	9.326853	10.673147	
60	9.280599	9.991947	9.288652	10.711348	9.317879	9.990404	9.327475	10.672525	
	Co-fin.	S I N.	Co-tan.	T A N.	Co-fin.	S I N.	Co-tan.	T A N. M	
79.				78.					

Canon Triangulorum Logarithmicus.

12.

M	S I N.	Co-fin.	TAN.	Co-tan.
0	9.317879	9.990404	9.327475	10.672525
1	9.318473	9.990378	9.328095	10.671905
2	9.319066	9.990351	9.328715	10.671285
3	9.319658	9.990324	9.329334	10.670666
4	9.320250	9.990297	9.329953	10.670047
5	9.320840	9.990270	9.330570	10.669430
6	9.321430	9.990243	9.331187	10.668813
7	9.322019	9.990215	9.331803	10.668197
8	9.322607	9.990188	9.332418	10.667582
9	9.323194	9.990161	9.333033	10.666967
10	9.323780	9.990134	9.333646	10.666354
11	9.324366	9.990107	9.334259	10.665741
12	9.324950	9.990079	9.334871	10.665129
13	9.325534	9.990052	9.335482	10.664518
14	9.326117	9.990025	9.336093	10.663907
15	9.326700	9.989997	9.336702	10.663298
16	9.327281	9.989970	9.337311	10.662689
17	9.327862	9.989942	9.337919	10.662081
18	9.328442	9.989915	9.338527	10.661473
19	9.329021	9.989887	9.339133	10.660867
20	9.329599	9.989860	9.339739	10.660261
21	9.330176	9.989832	9.340344	10.659656
22	9.330753	9.989804	9.340948	10.659052
23	9.331329	9.989777	9.341552	10.658448
24	9.331903	9.989749	9.342155	10.657845
25	9.332478	9.989721	9.342757	10.657243
26	9.333051	9.989693	9.343358	10.656642
27	9.333624	9.989665	9.343958	10.656042
28	9.334195	9.989637	9.344558	10.655442
29	9.334767	9.989610	9.345157	10.654843
30	9.335337	9.989582	9.345755	10.654245
	Co-fin.	S I N.	Co-tan.	TAN.

77.

13.

S I N.	Co-fin.	TAN.	Co-tan.	M
9.352088	9.988724	9.363364	10.636636	60
9.352635	9.988695	9.363940	10.636060	59
9.353181	9.988660	9.364515	10.635485	58
9.353726	9.988636	9.365090	10.634910	57
9.354271	9.988607	9.365664	10.634336	56
9.354815	9.988578	9.366237	10.633763	55
9.355358	9.988548	9.366810	10.633190	54
9.355901	9.988519	9.367382	10.632618	53
9.356443	9.988489	9.367953	10.632047	52
9.356984	9.988460	9.368524	10.631476	51
9.357524	9.988430	9.369094	10.630906	50
9.358064	9.988401	9.369663	10.630337	49
9.358603	9.988371	9.370232	10.629768	48
9.359141	9.988342	9.370799	10.629201	47
9.359678	9.988312	9.371367	10.628633	46
9.360215	9.988282	9.371933	10.628067	45
9.360752	9.988252	9.372499	10.627501	44
9.361287	9.988223	9.373064	10.626936	43
9.361822	9.988193	9.373629	10.626371	42
9.362356	9.988163	9.374193	10.625807	41
9.362889	9.988133	9.374756	10.625244	40
9.363422	9.988103	9.375319	10.624681	39
9.363954	9.988073	9.375881	10.624119	38
9.364485	9.988043	9.376442	10.623558	37
9.365016	9.988013	9.377003	10.622997	36
9.365546	9.987983	9.377563	10.622437	35
9.366075	9.987953	9.378122	10.621878	34
9.366604	9.987922	9.378681	10.621319	33
9.367132	9.987892	9.379239	10.620761	32
9.367659	9.987862	9.379797	10.620203	31
9.368185	9.987832	9.380354	10.619646	30
Co-fin.	S I N.	Co-tan.	TAN.	M

76.

Canon Triangulorum Logarithmicus.

12.

M	SIN.	Co-fin.	TAN.	Co-tan.
30	9.335337	9.989582	9.345755	10.654245
31	9.335906	9.989553	9.346353	10.653647
32	9.336475	9.989525	9.346949	10.653051
33	9.337043	9.989497	9.347545	10.652455
34	9.337610	9.989469	9.348141	10.651859
35	9.338176	9.989441	9.348735	10.651265
36	9.338742	9.989413	9.349329	10.650671
37	9.339307	9.989385	9.349922	10.650078
38	9.339871	9.989356	9.350514	10.649486
39	9.340434	9.989328	9.351106	10.648894
40	9.340996	9.989300	9.351697	10.648303
41	9.341558	9.989271	9.352287	10.647713
42	9.342119	9.989243	9.352876	10.647124
43	9.342679	9.989214	9.353465	10.646535
44	9.343239	9.989186	9.354053	10.645947
45	9.343797	9.989157	9.354640	10.645360
46	9.344355	9.989128	9.355227	10.644773
47	9.344912	9.989100	9.355813	10.644187
48	9.345469	9.989071	9.356398	10.643602
49	9.346024	9.989042	9.356982	10.643018
50	9.346579	9.989014	9.357566	10.642434
51	9.347134	9.988985	9.358149	10.641851
52	9.347687	9.988956	9.358731	10.641269
53	9.348240	9.988927	9.359313	10.640687
54	9.348792	9.988898	9.359893	10.640107
55	9.349343	9.988869	9.360474	10.639526
56	9.349893	9.988840	9.361053	10.638947
57	9.350443	9.988811	9.361632	10.638368
58	9.350992	9.988782	9.362210	10.637790
59	9.351540	9.988753	9.362787	10.637213
60	9.352088	9.988724	9.363364	10.636636
	Co-fin.	SIN.	Co-tan.	TAN.

77.

13.

SIN.	Co-fin.	TAN.	Co-tan.	M
9.368185	9.987832	9.380354	10.619646	30
9.368711	9.987801	9.380910	10.619090	29
9.369236	9.987771	9.381466	10.618534	28
9.369761	9.987740	9.382020	10.617980	27
9.370285	9.987710	9.382575	10.617425	26
9.370808	9.987679	9.383129	10.616871	25
9.371330	9.987649	9.383682	10.616318	24
9.371852	9.987618	9.384234	10.615766	23
9.372373	9.987588	9.384786	10.615214	22
9.372894	9.987557	9.385337	10.614663	21
9.373414	9.987526	9.385888	10.614112	20
9.373933	9.987496	9.386438	10.613562	19
9.374452	9.987465	9.386987	10.613013	18
9.374970	9.987434	9.387536	10.612464	17
9.375487	9.987403	9.388084	10.611916	16
9.376003	9.987372	9.388631	10.611369	15
9.376519	9.987341	9.389178	10.610822	14
9.377035	9.987310	9.389724	10.610276	13
9.377549	9.987279	9.390270	10.609730	12
9.378063	9.987248	9.390815	10.609185	11
9.378577	9.987217	9.391360	10.608640	10
9.379089	9.987186	9.391903	10.608097	9
9.379601	9.987155	9.392447	10.607553	8
9.380113	9.987124	9.392989	10.607011	7
9.380624	9.987092	9.393531	10.606469	6
9.381134	9.987061	9.394073	10.605927	5
9.381643	9.987030	9.394614	10.605386	4
9.382152	9.986998	9.395154	10.604846	3
9.382661	9.986967	9.395694	10.604306	2
9.383168	9.986936	9.396233	10.603767	1
9.383675	9.986904	9.396771	10.603229	0
Co-fin.	SIN.	Co-tan.	TAN.	M

76.

Canon Triangulorum Logarithmicus.

14.				
M	S I N.	Co sin.	T A N.	Co-tan.
0	9.383675	9.986904	9.396771	10.603229
1	9.384182	9.986873	9.397309	10.602691
2	9.384687	9.986841	9.397846	10.602154
3	9.385192	9.986809	9.398383	10.601617
4	9.385697	9.986778	9.398919	10.601081
5	9.386201	9.986746	9.399455	10.600545
6	9.386704	9.986714	9.399990	10.600010
7	9.387207	9.986683	9.400524	10.599476
8	9.387709	9.986651	9.401058	10.598942
9	9.388210	9.986619	9.401591	10.598409
10	9.388711	9.986587	9.402124	10.597876
11	9.389211	9.986555	9.402656	10.597344
12	9.389711	9.986523	9.403187	10.596813
13	9.390210	9.986491	9.403718	10.596282
14	9.390708	9.986459	9.404249	10.595751
15	9.391206	9.986427	9.404778	10.595221
16	9.391703	9.986395	9.405308	10.594692
17	9.392199	9.986363	9.405836	10.594164
18	9.392695	9.986331	9.406364	10.593636
19	9.393191	9.986299	9.406892	10.593108
20	9.393685	9.986266	9.407419	10.592581
21	9.394179	9.986234	9.407945	10.592055
22	9.394673	9.986202	9.408471	10.591529
23	9.395166	9.986169	9.408996	10.591004
24	9.395658	9.986137	9.409521	10.590479
25	9.396150	9.986104	9.410045	10.589955
26	9.396641	9.986072	9.410569	10.589431
27	9.397132	9.986039	9.411092	10.588908
28	9.397622	9.986007	9.411615	10.588385
29	9.398111	9.985974	9.412137	10.587863
30	9.398600	9.985942	9.412658	10.587342
	Co sin.	S I N.	Co-tan.	T A N.

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15.				
S I N.	Co sin.	T A N.	Co-tan.	
9.412995	9.984944	9.428052	10.571948	60
9.413467	9.984910	9.428558	10.571442	59
9.413938	9.984876	9.429062	10.570938	58
9.414408	9.984842	9.429566	10.570434	57
9.414878	9.984808	9.430070	10.569930	56
9.415347	9.984774	9.430573	10.569427	55
9.415815	9.984740	9.431075	10.568925	54
9.416283	9.984706	9.431577	10.568423	53
9.416751	9.984672	9.432079	10.567921	52
9.417217	9.984638	9.432580	10.567420	51
9.417684	9.984603	9.433080	10.566920	50
9.418150	9.984569	9.433580	10.566420	49
9.418615	9.984535	9.434080	10.565920	48
9.419079	9.984500	9.434579	10.565421	47
9.419544	9.984466	9.435078	10.564922	46
9.420007	9.984432	9.435576	10.564424	45
9.420470	9.984397	9.436073	10.563927	44
9.420933	9.984363	9.436570	10.563430	43
9.421395	9.984328	9.437067	10.562933	42
9.421857	9.984294	9.437563	10.562437	41
9.422318	9.984259	9.438059	10.561941	40
9.422788	9.984224	9.438554	10.561446	39
9.423238	9.984190	9.439048	10.560952	38
9.423697	9.984155	9.439543	10.560457	37
9.424156	9.984120	9.440036	10.559964	36
9.424615	9.984085	9.440529	10.559471	35
9.425073	9.984050	9.441022	10.558978	34
9.425530	9.984015	9.441514	10.558486	33
9.425987	9.983981	9.442006	10.557994	32
9.426443	9.983946	9.442497	10.557503	31
9.426899	9.983911	9.442988	10.557012	30
Co sin.	S I N.	Co-tan.	T A N.	M

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Canon Triangulorum Logarithmicus.

14.

M	SIN.	Co-fin.	TAN.	Co-tan.
30	9.398600	9.985942	9.412658	10.587342
31	9.399088	9.985909	9.413179	10.586821
32	9.399575	9.985876	9.413699	10.586301
33	9.400062	9.985843	9.414219	10.585781
34	9.400549	9.985811	9.414738	10.585262
35	9.401035	9.985778	9.415257	10.584743
36	9.401520	9.985745	9.415775	10.584225
37	9.402005	9.985712	9.416293	10.583707
38	9.402489	9.985679	9.416810	10.583190
39	9.402972	9.985646	9.417326	10.582674
40	9.403455	9.985613	9.417842	10.582158
41	9.403938	9.985580	9.418358	10.581642
42	9.404420	9.985547	9.418873	10.581127
43	9.404901	9.985514	9.419387	10.580613
44	9.405382	9.985480	9.419901	10.580099
45	9.405862	9.985447	9.420415	10.579585
46	9.406341	9.985414	9.420927	10.579073
47	9.406820	9.985381	9.421440	10.578560
48	9.407299	9.985347	9.421952	10.578048
49	9.407777	9.985314	9.422463	10.577537
50	9.408254	9.985280	9.422974	10.577026
51	9.408731	9.985247	9.423484	10.576516
52	9.409207	9.985213	9.423993	10.576007
53	9.409682	9.985180	9.424503	10.575497
54	9.410157	9.985146	9.425011	10.574989
55	9.410632	9.985113	9.425519	10.574481
56	9.411106	9.985079	9.426027	10.573973
57	9.411579	9.985045	9.426534	10.573466
58	9.412052	9.985011	9.427041	10.572959
59	9.412524	9.984978	9.427547	10.572453
60	9.412996	9.984944	9.428052	10.571948
Co-fin.	SIN.	Co-tan.	TAN.	

75.

15.

SIN.	Co-fin.	TAN.	Co-tan.	M
9.426899	9.983911	9.442988	10.557012	30
9.427354	9.983875	9.443479	10.556521	29
9.427809	9.983840	9.443968	10.556032	28
9.428263	9.983805	9.444458	10.555542	27
9.428717	9.983770	9.444947	10.555053	26
9.429170	9.983735	9.445435	10.554565	25
9.429623	9.983700	9.445923	10.554077	24
9.430075	9.983664	9.446411	10.553589	23
9.430527	9.983629	9.446898	10.553102	22
9.430978	9.983594	9.447384	10.552616	21
9.431429	9.983558	9.447870	10.552130	20
9.431879	9.983523	9.448356	10.551644	19
9.432329	9.983487	9.448841	10.551159	18
9.432778	9.983452	9.449326	10.550674	17
9.433226	9.983416	9.449810	10.550190	16
9.433675	9.983381	9.450294	10.549706	15
9.434122	9.983345	9.450777	10.549223	14
9.434569	9.983309	9.451260	10.548740	13
9.435016	9.983273	9.451743	10.548257	12
9.435462	9.983238	9.452225	10.547775	11
9.435908	9.983202	9.452706	10.547294	10
9.436353	9.983166	9.453187	10.546813	9
9.436798	9.983130	9.453668	10.546332	8
9.437242	9.983094	9.454148	10.545852	7
9.437686	9.983058	9.454628	10.545372	6
9.438129	9.983022	9.455107	10.544893	5
9.438572	9.982986	9.455586	10.544414	4
9.439014	9.982950	9.456064	10.543936	3
9.439456	9.982914	9.456542	10.543458	2
9.439897	9.982878	9.457019	10.542981	1
9.440338	9.982842	9.457496	10.542504	0
Co-fin.	SIN.	Co-tan.	TAN.	M

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Caxon Triangulorum Logarithmicus.

16.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.440338	9.982842	9.457496	10.542504
1	9.440778	9.982805	9.457973	10.542027
2	9.441218	9.982769	9.458449	10.541551
3	9.441658	9.982733	9.458925	10.541075
4	9.442096	9.982696	9.459400	10.540600
5	9.442535	9.982660	9.459875	10.540125
6	9.442973	9.982624	9.460349	10.539651
7	9.443410	9.982587	9.460823	10.539177
8	9.443847	9.982551	9.461297	10.538703
9	9.444284	9.982514	9.461770	10.538230
10	9.444720	9.982477	9.462242	10.537758
11	9.445155	9.982441	9.462715	10.537285
12	9.445590	9.982404	9.463186	10.536814
13	9.446025	9.982367	9.463658	10.536342
14	9.446459	9.982331	9.464128	10.535872
15	9.446893	9.982294	9.464599	10.535401
16	9.447326	9.982257	9.465069	10.534931
17	9.447759	9.982220	9.465539	10.534461
18	9.448191	9.982183	9.466008	10.533992
19	9.448623	9.982146	9.466477	10.533523
20	9.449054	9.982109	9.466945	10.533055
21	9.449485	9.982072	9.467413	10.532587
22	9.449915	9.982035	9.467880	10.532120
23	9.450345	9.981998	9.468347	10.531653
24	9.450775	9.981961	9.468814	10.531186
25	9.451204	9.981924	9.469280	10.530720
26	9.451632	9.981886	9.469746	10.530254
27	9.452060	9.981849	9.470211	10.529789
28	9.452488	9.981812	9.470676	10.529324
29	9.452915	9.981774	9.471141	10.528859
30	9.453342	9.981737	9.471605	10.528395
	Co-fin.	S I N.	Co-tan.	T A N.

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17.

S I N.	Co-fin.	T A N.	Co-tan.	
9.465935	9.980596	9.485339	10.514661	60
9.466348	9.980558	9.485791	10.514209	59
9.466761	9.980519	9.486242	10.513758	58
9.467173	9.980480	9.486693	10.513307	57
9.467585	9.980442	9.487143	10.512857	56
9.467996	9.980403	9.487593	10.512407	55
9.468407	9.980364	9.488043	10.511957	54
9.468817	9.980325	9.488492	10.511508	53
9.469227	9.980286	9.488941	10.511059	52
9.469637	9.980247	9.489390	10.510610	51
9.470046	9.980208	9.489838	10.510162	50
9.470455	9.980169	9.490286	10.509714	49
9.470863	9.980130	9.490733	10.509267	48
9.471271	9.980091	9.491180	10.508820	47
9.471679	9.980052	9.491627	10.508373	46
9.472086	9.980012	9.492073	10.507927	45
9.472492	9.979973	9.492519	10.507481	44
9.472898	9.979934	9.492965	10.507035	43
9.473304	9.979895	9.493410	10.506590	42
9.473710	9.979855	9.493854	10.506146	41
9.474115	9.979816	9.494299	10.505701	40
9.474519	9.979776	9.494743	10.505257	39
9.474923	9.979737	9.495186	10.504814	38
9.475327	9.979697	9.495630	10.504370	37
9.475730	9.979658	9.496073	10.503927	36
9.476133	9.979618	9.496515	10.503485	35
9.476536	9.979579	9.496957	10.503043	34
9.476938	9.979539	9.497399	10.502601	33
9.477340	9.979499	9.497841	10.502159	32
9.477741	9.979459	9.498282	10.501718	31
9.478142	9.979420	9.498722	10.501278	30
	Co-fin.	S I N.	Co-tan.	T A N.

72.

Canon Triangulorum Logarithmicus.

16.

<i>M</i>	<i>S I N.</i>	<i>Co-fin.</i>	<i>T A N.</i>	<i>Co-tan.</i>
30	9.453342	9.981737	9.471605	10.528395
31	9.453768	9.981700	9.472059	10.527931
32	9.454194	9.981662	9.472532	10.527468
33	9.454619	9.981625	9.472995	10.527005
34	9.455044	9.981587	9.473457	10.526543
35	9.455469	9.981549	9.473919	10.526081
36	9.455893	9.981512	9.474381	10.525619
37	9.456316	9.981474	9.474842	10.525158
38	9.456739	9.981436	9.475303	10.524697
39	9.457162	9.981399	9.475763	10.524237
40	9.457584	9.981361	9.476223	10.523777
41	9.458006	9.981323	9.476683	10.523317
42	9.458427	9.981285	9.477142	10.522858
43	9.458848	9.981247	9.477601	10.522399
44	9.459258	9.981209	9.478059	10.521941
45	9.459688	9.981171	9.478517	10.521483
46	9.460103	9.981133	9.478975	10.521025
47	9.460527	9.981095	9.479432	10.520568
48	9.460946	9.981057	9.479889	10.520111
49	9.461364	9.981019	9.480345	10.519655
50	9.461782	9.980981	9.480801	10.519199
51	9.462199	9.980942	9.481257	10.518743
52	9.462616	9.980904	9.481712	10.518288
53	9.463032	9.980866	9.482167	10.517833
54	9.463448	9.980827	9.482621	10.517379
55	9.463864	9.980789	9.483075	10.516925
56	9.464279	9.980750	9.483529	10.516471
57	9.464694	9.980712	9.483982	10.516018
58	9.465108	9.980673	9.484435	10.515565
59	9.465522	9.980635	9.484887	10.515113
60	9.465935	9.980596	9.485339	10.514661
	<i>Co-fin.</i>	<i>S I N.</i>	<i>Co-tan.</i>	<i>T A N.</i>

73.

17.

<i>S I N.</i>	<i>Co-fin.</i>	<i>T A N.</i>	<i>Co-tan.</i>	<i>M</i>
9.478142	9.979420	9.493722	10.501278	30
9.478542	9.979380	9.499163	10.500837	29
9.478942	9.979340	9.499603	10.500397	28
9.479342	9.979300	9.500042	10.499958	27
9.479741	9.979260	9.500481	10.499519	26
9.480140	9.979220	9.500920	10.499080	25
9.480539	9.979180	9.501359	10.498641	24
9.480937	9.979140	9.501797	10.498203	23
9.481334	9.979100	9.502235	10.497765	22
9.481731	9.979059	9.502672	10.497328	21
9.482128	9.979019	9.503109	10.496891	20
9.482525	9.978979	9.503546	10.496454	19
9.482921	9.978939	9.503982	10.496018	18
9.483316	9.978898	9.504418	10.495582	17
9.483712	9.978858	9.504854	10.495146	16
9.484107	9.978817	9.505289	10.494711	15
9.484501	9.978777	9.505724	10.494276	14
9.484895	9.978737	9.506159	10.493841	13
9.485289	9.978696	9.506593	10.493407	12
9.485682	9.978655	9.507027	10.492973	11
9.486075	9.978615	9.507460	10.492540	10
9.486467	9.978574	9.507893	10.492107	9
9.486860	9.978533	9.508326	10.491674	8
9.487251	9.978493	9.508759	10.491241	7
9.487643	9.978452	9.509191	10.490809	6
9.488034	9.978411	9.509622	10.490378	5
9.488424	9.978370	9.510054	10.489946	4
9.488814	9.978329	9.510485	10.489515	3
9.489204	9.978288	9.510916	10.489084	2
9.489593	9.978247	9.511346	10.488654	1
9.489982	9.978206	9.511776	10.488224	0
<i>Co-fin.</i>	<i>S I N.</i>	<i>Co-tan.</i>	<i>T A N.</i>	<i>M</i>

72.

Canon Triangulorum Logarithmicus.

18.					19.				
M.	S I N.	Co-fin.	TAN.	Co-tan.	S I N.	Co-fin.	TAN.	Co-tan.	
0	9.489982	9.978206	9.511776	10.488224	9.512642	9.975670	9.536972	10.463028	60
1	9.490371	9.978165	9.512206	10.487794	9.513009	9.975627	9.537382	10.462618	59
2	9.490759	9.978124	9.512635	10.487365	9.513375	9.975583	9.537792	10.462208	58
3	9.491147	9.978083	9.513064	10.486936	9.513741	9.975539	9.538202	10.461798	57
4	9.491535	9.978042	9.513493	10.486507	9.514107	9.975496	9.538611	10.461389	56
5	9.491922	9.978001	9.513921	10.486079	9.514472	9.975452	9.539020	10.460980	55
6	9.492308	9.977959	9.514349	10.485651	9.514837	9.975408	9.539429	10.460571	54
7	9.492695	9.977918	9.514777	10.485223	9.515202	9.975365	9.539837	10.450163	53
8	9.493081	9.977877	9.515204	10.484790	9.515566	9.975321	9.540245	10.459755	52
9	9.493466	9.977835	9.515631	10.484369	9.515930	9.975277	9.540653	10.459347	51
10	9.493851	9.977794	9.516057	10.483943	9.516294	9.975233	9.541061	10.458939	50
11	9.494236	9.977752	9.516484	10.483516	9.516657	9.975189	9.541468	10.458532	49
12	9.494621	9.977711	9.516910	10.483090	9.517020	9.975145	9.541875	10.458125	48
13	9.495005	9.977669	9.517335	10.482665	9.517382	9.975101	9.542281	10.457719	47
14	9.495388	9.977628	9.517761	10.482239	9.517745	9.975057	9.542688	10.457312	46
15	9.495772	9.977586	9.518186	10.481814	9.518107	9.975013	9.543094	10.456906	45
16	9.496154	9.977544	9.518610	10.481390	9.518468	9.974969	9.543499	10.456501	44
17	9.496537	9.977503	9.519034	10.480966	9.518829	9.974925	9.543905	10.456095	43
18	9.496919	9.977461	9.519458	10.480542	9.519190	9.974880	9.544310	10.455690	42
19	9.497301	9.977419	9.519882	10.480118	9.519551	9.974836	9.544715	10.455285	41
20	9.497682	9.977377	9.520305	10.479695	9.519911	9.974792	9.545119	10.454881	40
21	9.498064	9.977335	9.520728	10.479272	9.520271	9.974748	9.545524	10.454476	39
22	9.498444	9.977293	9.521151	10.478849	9.520631	9.974703	9.545928	10.454072	38
23	9.498825	9.977251	9.521573	10.478427	9.520990	9.974659	9.546331	10.453669	37
24	9.499204	9.977209	9.521995	10.478005	9.521349	9.974614	9.546735	10.453255	36
25	9.499584	9.977167	9.522417	10.477583	9.521707	9.974570	9.547138	10.452862	35
26	9.499963	9.977125	9.522838	10.477162	9.522066	9.974525	9.547540	10.452460	34
27	9.500342	9.977083	9.523259	10.476741	9.522424	9.974481	9.547943	10.452057	33
28	9.500721	9.977041	9.523680	10.476320	9.522781	9.974436	9.548345	10.451655	32
29	9.501099	9.976999	9.524100	10.475900	9.523138	9.974391	9.548747	10.451253	31
30	9.501476	9.976957	9.524520	10.475480	9.523495	9.974347	9.549149	10.450851	30
	Co-fin.	S I N.	Co-tan.	TAN.	Co-fin.	S I N.	Co-tan.	TAN.	M
71.					70.				

Canon Triangulorum Logarithmicus.

18.

M	S I N.	Co-fin.	T A N.	Co-tan.
30	9.501475	9.976957	9.524520	10.475480
31	9.501854	9.976914	9.524940	10.475060
32	9.502231	9.976872	9.525359	10.474641
33	9.502607	9.976830	9.525778	10.474222
34	9.502984	9.976787	9.526197	10.473803
35	9.503360	9.976745	9.526615	10.473385
36	9.503735	9.976702	9.527033	10.472967
37	9.504110	9.976660	9.527451	10.472549
38	9.504485	9.976617	9.527868	10.472132
39	9.504860	9.976574	9.528285	10.471715
40	9.505234	9.976532	9.528702	10.471298
41	9.505608	9.976489	9.529119	10.470881
42	9.505981	9.976446	9.529535	10.470465
43	9.506354	9.976404	9.529951	10.470049
44	9.506727	9.976361	9.530366	10.469634
45	9.507099	9.976318	9.530781	10.469219
46	9.507471	9.976275	9.531196	10.468804
47	9.507843	9.976232	9.531611	10.468389
48	9.508214	9.976189	9.532025	10.467975
49	9.508585	9.976146	9.532439	10.467561
50	9.508956	9.976103	9.532853	10.467147
51	9.509326	9.976060	9.533266	10.466734
52	9.509696	9.976017	9.533679	10.466321
53	9.510065	9.975974	9.534092	10.465908
54	9.510434	9.975930	9.534504	10.465496
55	9.510803	9.975887	9.534916	10.465084
56	9.511172	9.975844	9.535328	10.464672
57	9.511540	9.975800	9.535739	10.464261
58	9.511907	9.975757	9.536150	10.463850
59	9.512275	9.975713	9.536561	10.463439
60	9.512642	9.975670	9.536972	10.463028
	Co-fin.	S I N.	Co-tan.	T A N.

71.

19.

S I N.	Co-fin.	T A N.	Co-tan.
9.523495	9.974347	9.549149	10.450351
9.523852	9.974302	9.549550	10.450450
9.524208	9.974257	9.549951	10.450049
9.524564	9.974212	9.550352	10.449648
9.524920	9.974167	9.550752	10.449248
9.525275	9.974122	9.551153	10.448847
9.525630	9.974077	9.551552	10.448448
9.525984	9.974032	9.551952	10.448048
9.526339	9.973987	9.552351	10.447649
9.526693	9.973942	9.552750	10.447250
9.527046	9.973897	9.553149	10.446851
9.527400	9.973852	9.553548	10.446452
9.527753	9.973807	9.553946	10.446054
9.528105	9.973761	9.554344	10.445656
9.528458	9.973716	9.554741	10.445259
9.528810	9.973671	9.555139	10.444861
9.529161	9.973625	9.555536	10.444464
9.529513	9.973580	9.555933	10.444067
9.529864	9.973535	9.556329	10.443671
9.530215	9.973489	9.556725	10.443275
9.530565	9.973444	9.557121	10.442879
9.530915	9.973398	9.557517	10.442483
9.531265	9.973352	9.557913	10.442087
9.531614	9.973307	9.558308	10.441692
9.531963	9.973261	9.558703	10.441297
9.532312	9.973215	9.559097	10.440903
9.532661	9.973169	9.559491	10.440509
9.533009	9.973124	9.559885	10.440115
9.533357	9.973078	9.560279	10.439721
9.533704	9.973032	9.560673	10.439327
9.534052	9.972986	9.561066	10.438934
Co-fin.	S I N.	Co-tan.	T A N.

70.

Canon Triangulorum Logarithmicus.

20.					21.				
M.	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	
0	9.534052	9.972986	9.561066	10.438934	9.554327	9.970152	9.584177	10.415823	60
1	9.534399	9.972940	9.561459	10.438541	9.554658	9.970103	9.584555	10.415445	59
2	9.534745	9.972894	9.561851	10.438149	9.554987	9.970055	9.584932	10.415068	58
3	9.535092	9.972848	9.562244	10.437756	9.555315	9.970006	9.585309	10.414691	57
4	9.535438	9.972802	9.562636	10.437364	9.555643	9.969957	9.585686	10.414314	56
5	9.535783	9.972755	9.563028	10.436972	9.555971	9.969909	9.586062	10.413938	55
6	9.536129	9.972709	9.563419	10.436581	9.556299	9.969860	9.586439	10.413561	54
7	9.536474	9.972663	9.563811	10.436189	9.556626	9.969811	9.586815	10.413185	53
8	9.536818	9.972617	9.564202	10.435798	9.556953	9.969762	9.587190	10.412810	52
9	9.537163	9.972570	9.564593	10.435407	9.557280	9.969714	9.587566	10.412434	51
10	9.537507	9.972524	9.564983	10.435017	9.557606	9.969665	9.587941	10.412059	50
11	9.537851	9.972478	9.565373	10.434627	9.557932	9.969616	9.588316	10.411684	49
12	9.538194	9.972431	9.565763	10.434237	9.558258	9.969567	9.588691	10.411309	48
13	9.538538	9.972385	9.566153	10.433847	9.558583	9.969518	9.589066	10.410934	47
14	9.538880	9.972338	9.566542	10.433458	9.558909	9.969469	9.589440	10.410560	46
15	9.539223	9.972291	9.566932	10.433068	9.559234	9.969420	9.589814	10.410186	45
16	9.539565	9.972245	9.567320	10.432680	9.559558	9.969370	9.590188	10.409812	44
17	9.539907	9.972198	9.567709	10.432291	9.559883	9.969321	9.590562	10.409438	43
18	9.540249	9.972151	9.568098	10.431902	9.560207	9.969272	9.590935	10.409065	42
19	9.540590	9.972105	9.568486	10.431514	9.560531	9.969223	9.591308	10.408692	41
20	9.540931	9.972058	9.568873	10.431127	9.560855	9.969173	9.591681	10.408319	40
21	9.541272	9.972011	9.569261	10.430739	9.561178	9.969124	9.592054	10.407946	39
22	9.541613	9.971964	9.569648	10.430352	9.561501	9.969075	9.592426	10.407574	38
23	9.541953	9.971917	9.570035	10.429965	9.561824	9.969025	9.592799	10.407201	37
24	9.542293	9.971870	9.570422	10.429578	9.562146	9.968976	9.593171	10.406829	36
25	9.542632	9.971823	9.570809	10.429191	9.562468	9.968926	9.593542	10.406458	35
26	9.542971	9.971776	9.571195	10.428805	9.562790	9.968877	9.593914	10.406086	34
27	9.543310	9.971729	9.571581	10.428419	9.563112	9.968827	9.594285	10.405715	33
28	9.543649	9.971682	9.571967	10.428033	9.563433	9.968777	9.594656	10.405344	32
29	9.543987	9.971635	9.572352	10.427648	9.563755	9.968728	9.595027	10.404973	31
30	9.544325	9.971588	9.572738	10.427262	9.564075	9.968678	9.595398	10.404602	30
	Co-fin.	S I N.	Co-tan.	T A N.	Co-fin.	S I N.	Co-tan.	T A N.	M.

Canon Triangulorum Logarithmicus.

20.

21.

	S I N.	Co-fin.	TAN.	Co-tan.
30	9.544325	9.971588	9.572738	10.427262
31	9.544663	9.971540	9.573123	10.426877
32	9.545000	9.971493	9.573507	10.426493
33	9.545338	9.971446	9.573892	10.426108
34	9.545674	9.971398	9.574276	10.425724
35	9.546011	9.971351	9.574660	10.425340
36	9.546347	9.971303	9.575044	10.424956
37	9.546683	9.971256	9.575427	10.424573
38	9.547019	9.971208	9.575810	10.424190
39	9.547354	9.971161	9.576193	10.423807
40	9.547689	9.971113	9.576576	10.423424
41	9.548024	9.971066	9.576959	10.423041
42	9.548359	9.971018	9.577341	10.422659
43	9.548693	9.970970	9.577723	10.422277
44	9.549027	9.970922	9.578104	10.421896
45	9.549360	9.970874	9.578486	10.421514
46	9.549693	9.970827	9.578867	10.421133
47	9.550026	9.970779	9.579248	10.420752
48	9.550359	9.970731	9.579629	10.420371
49	9.550692	9.970683	9.580009	10.419991
50	9.551024	9.970635	9.580389	10.419611
51	9.551356	9.970586	9.580769	10.419231
52	9.551687	9.970538	9.581149	10.418851
53	9.552018	9.970490	9.581528	10.418472
54	9.552349	9.970442	9.581907	10.418093
55	9.552680	9.970394	9.582286	10.417714
56	9.553010	9.970345	9.582665	10.417335
57	9.553341	9.970297	9.583044	10.416956
58	9.553670	9.970249	9.583422	10.416578
59	9.554000	9.970200	9.583800	10.416200
60	9.554329	9.970152	9.584177	10.415823
	Co-fin.	S I N.	Co-tan.	TAN.

69.

S I N.	Co-fin.	TAN.	Co-tan.	
9.564675	9.968678	9.595398	10.404602	30
9.564396	9.968628	9.595768	10.404232	29
9.564716	9.968578	9.596138	10.403862	28
9.565036	9.968528	9.596508	10.403492	27
9.565356	9.968479	9.596878	10.403122	26
9.565676	9.968429	9.597247	10.402753	25
9.565995	9.968379	9.597616	10.402384	24
9.566314	9.968329	9.597985	10.402015	23
9.566632	9.968278	9.598354	10.401646	22
9.566951	9.968228	9.598722	10.401276	21
9.567269	9.968178	9.599091	10.400909	20
9.567587	9.968128	9.599459	10.400541	19
9.567904	9.968078	9.599827	10.400173	18
9.568222	9.968027	9.600194	10.399806	17
9.568539	9.967977	9.600562	10.399438	16
9.568856	9.967927	9.600929	10.399071	15
9.569172	9.967876	9.601296	10.398704	14
9.569488	9.967826	9.601663	10.398337	13
9.569804	9.967775	9.602029	10.397971	12
9.570120	9.967725	9.602395	10.397605	11
9.570435	9.967674	9.602761	10.397239	10
9.570751	9.967624	9.603127	10.396873	9
9.571066	9.967573	9.603493	10.396507	8
9.571380	9.967522	9.603858	10.396142	7
9.571695	9.967471	9.604223	10.395777	6
9.572009	9.967421	9.604588	10.395412	5
9.572323	9.967370	9.604953	10.395047	4
9.572636	9.967319	9.605317	10.394683	3
9.572950	9.967268	9.605682	10.394318	2
9.573263	9.967217	9.606046	10.393954	1
9.573575	9.967166	9.606410	10.393590	0
Co-fin.	S I N.	Co-tan.	TAN.	

68.

Canon Triangulorum Logarithmicus.

22.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.573575	9.967166	9.606410	10.393590
1	9.573888	9.967115	9.606773	10.393227
2	9.574200	9.967064	9.607137	10.392863
3	9.574512	9.967013	9.607500	10.392500
4	9.574824	9.966961	9.607863	10.392137
5	9.575136	9.966910	9.608225	10.391775
6	9.575447	9.966859	9.608588	10.391412
7	9.575758	9.966808	9.608950	10.391050
8	9.576069	9.966756	9.609312	10.390688
9	9.576379	9.966705	9.609674	10.390326
10	9.576689	9.966653	9.610036	10.389964
11	9.576999	9.966602	9.610397	10.389603
12	9.577309	9.966550	9.610759	10.389241
13	9.577618	9.966499	9.611120	10.388880
14	9.577927	9.966447	9.611480	10.388520
15	9.578236	9.966395	9.611841	10.388159
16	9.578545	9.966344	9.612201	10.387799
17	9.578853	9.966292	9.612561	10.387439
18	9.579162	9.966240	9.612921	10.387079
19	9.579470	9.966188	9.613281	10.386719
20	9.579777	9.966136	9.613641	10.386359
21	9.580085	9.966085	9.614000	10.386000
22	9.580392	9.966033	9.614359	10.385641
23	9.580699	9.965981	9.614718	10.385282
24	9.581005	9.965929	9.615077	10.384923
25	9.581312	9.965876	9.615435	10.384565
26	9.581618	9.965824	9.615793	10.384207
27	9.581924	9.965772	9.616151	10.383849
28	9.582229	9.965720	9.616509	10.383491
29	9.582535	9.965668	9.616867	10.383133
30	9.582840	9.965615	9.617224	10.382776
	Co-fin.	S I N.	Co-tan.	T A N.

67.

23.

S I N.	Co-fin.	T A N.	Co-tan.	
9.591878	9.964026	9.627852	10.372148	60
9.592176	9.963972	9.628203	10.371797	59
9.592473	9.963919	9.628554	10.371446	58
9.592770	9.963865	9.628905	10.371095	57
9.593067	9.963811	9.629255	10.370745	56
9.593363	9.963757	9.629606	10.370394	55
9.593659	9.963704	9.629956	10.370044	54
9.593955	9.963650	9.630306	10.369694	53
9.594251	9.963596	9.630656	10.369344	52
9.594547	9.963542	9.631005	10.368995	51
9.594842	9.963488	9.631355	10.368645	50
9.595137	9.963434	9.631704	10.368296	49
9.595432	9.963379	9.632053	10.367947	48
9.595727	9.963325	9.632402	10.367598	47
9.596021	9.963271	9.632750	10.367250	46
9.596315	9.963217	9.633099	10.366901	45
9.596609	9.963163	9.633447	10.366553	44
9.596903	9.963108	9.633795	10.366205	43
9.597196	9.963054	9.634143	10.365857	42
9.597490	9.962999	9.634490	10.365510	41
9.597783	9.962945	9.634838	10.365162	40
9.598075	9.962890	9.635185	10.364815	39
9.598368	9.962836	9.635532	10.364468	38
9.598660	9.962781	9.635879	10.364121	37
9.598952	9.962727	9.636226	10.363774	36
9.599244	9.962672	9.636572	10.363428	35
9.599536	9.962617	9.636919	10.363081	34
9.599827	9.962562	9.637265	10.362735	33
9.600118	9.962508	9.637611	10.362389	32
9.600409	9.962453	9.637956	10.362044	31
9.600700	9.962398	9.638302	10.361698	30
	Co-fin.	S I N.	Co-tan.	T A N.

66.

Canon Triangulorum Logarithmicus.

22.

23.

M	S I N.	Co-fin.	TAN.	Co-tan.
30	9.582840	9.965615	9.617224	10.382776
31	9.583145	9.965563	9.617582	10.382418
32	9.583449	9.965511	9.617939	10.382061
33	9.583754	9.965458	9.618295	10.381705
34	9.584058	9.965406	9.618652	10.381348
35	9.584361	9.965353	9.619008	10.380992
36	9.584665	9.965301	9.619364	10.380635
37	9.584968	9.965248	9.619720	10.380280
38	9.585272	9.965195	9.620076	10.379924
39	9.585574	9.965143	9.620432	10.379568
40	9.585877	9.965090	9.620787	10.379213
41	9.587179	9.965037	9.621142	10.378858
42	9.586482	9.964984	9.621497	10.378503
43	9.586783	9.964931	9.621852	10.378148
44	9.587085	9.964879	9.622206	10.377793
45	9.587386	9.964826	9.622561	10.377439
46	9.587688	9.964773	9.622915	10.377085
47	9.587989	9.964720	9.623269	10.376731
48	9.588289	9.964666	9.623623	10.376377
49	9.588590	9.964613	9.623976	10.376024
50	9.588890	9.964560	9.624330	10.375670
51	9.589190	9.964507	9.624683	10.375317
52	9.589489	9.964454	9.625036	10.374964
53	9.589789	9.964400	9.625388	10.374612
54	9.590088	9.964347	9.625741	10.374259
55	9.590387	9.964294	9.626093	10.373907
56	9.590686	9.964240	9.626445	10.373555
57	9.590984	9.964187	9.626797	10.373203
58	9.591282	9.964133	9.627149	10.372851
59	9.591580	9.964080	9.627501	10.372499
60	9.591878	9.964026	9.627852	10.372148
Co-fin.	S I N.	Co-tan.	TAN.	

S I N.	Co-fin.	TAN.	Co-tan.	M
9.600700	9.962398	9.638302	10.361698	30
9.600990	9.962343	9.638647	10.361353	29
9.601280	9.962288	9.638992	10.361008	28
9.601570	9.962233	9.639337	10.360663	27
9.601860	9.962178	9.639682	10.360318	26
9.602150	9.962123	9.640027	10.359973	25
9.602439	9.962067	9.640371	10.359629	24
9.602728	9.962012	9.640716	10.359284	23
9.603017	9.961957	9.641060	10.358940	22
9.603305	9.961902	9.641404	10.358596	21
9.603594	9.961846	9.641747	10.358253	20
9.603882	9.961791	9.642091	10.357909	19
9.604170	9.961735	9.642434	10.357566	18
9.604457	9.961680	9.642777	10.357223	17
9.604745	9.961624	9.643120	10.356880	16
9.605032	9.961569	9.643463	10.356537	15
9.605319	9.961513	9.643806	10.356194	14
9.605606	9.961458	9.644148	10.355852	13
9.605892	9.961402	9.644490	10.355510	12
9.606179	9.961346	9.644832	10.355168	11
9.606465	9.961290	9.645174	10.354826	10
9.606751	9.961235	9.645516	10.354484	9
9.607036	9.961179	9.645857	10.354143	8
9.607322	9.961123	9.646199	10.353801	7
9.607607	9.961067	9.646540	10.353460	6
9.607892	9.961011	9.646881	10.353119	5
9.608177	9.960955	9.647222	10.352778	4
9.608461	9.960899	9.647562	10.352438	3
9.608745	9.960842	9.647903	10.352097	2
9.609029	9.960786	9.648243	10.351757	1
9.609313	9.960730	9.648583	10.351417	0
Co-fin.	S I N.	Co-tan.	TAN.	M

67.

66.

Canon Triangulorum Logarithmicus.

24.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.609313	9.960730	9.648583	10.351417
1	9.609597	9.960674	9.648923	10.351077
2	9.609880	9.960618	9.649263	10.350737
3	9.610164	9.960561	9.649602	10.350398
4	9.610447	9.960505	9.649942	10.350058
5	9.610729	9.960448	9.650281	10.349719
6	9.611012	9.960392	9.650620	10.349380
7	9.611294	9.960335	9.650959	10.349041
8	9.611576	9.960279	9.651297	10.348703
9	9.611858	9.960222	9.651636	10.348364
10	9.612140	9.960165	9.651974	10.348026
11	9.612421	9.960109	9.652312	10.347688
12	9.612702	9.960052	9.652650	10.347350
13	9.612983	9.959995	9.652988	10.347012
14	9.613264	9.959938	9.653326	10.346674
15	9.613545	9.959882	9.653663	10.346337
16	9.613825	9.959825	9.654000	10.346000
17	9.614105	9.959768	9.654337	10.345663
18	9.614385	9.959711	9.654674	10.345326
19	9.614665	9.959654	9.655011	10.344989
20	9.614944	9.959596	9.655348	10.344652
21	9.615223	9.959539	9.655684	10.344316
22	9.615502	9.959482	9.656020	10.343980
23	9.615781	9.959425	9.656356	10.343644
24	9.616060	9.959368	9.656692	10.343308
25	9.616338	9.959310	9.657028	10.342972
26	9.616616	9.959253	9.657364	10.342636
27	9.616894	9.959195	9.657699	10.342301
28	9.617172	9.959138	9.658034	10.341966
29	9.617450	9.959080	9.658369	10.341631
30	9.617727	9.959023	9.658704	10.341296
	Co-fin.	S I N.	Co-tan.	T A N.

65.

25.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.625948	9.957276	9.668673	10.331327	60
9.626219	9.957217	9.669002	10.330998	59
9.626490	9.957158	9.669332	10.330668	58
9.626760	9.957099	9.669662	10.330339	57
9.627030	9.957040	9.669991	10.330009	56
9.627300	9.956981	9.670320	10.329680	55
9.627570	9.956921	9.670649	10.329351	54
9.627840	9.956862	9.670977	10.329023	53
9.628109	9.956803	9.671306	10.328694	52
9.628378	9.956744	9.671635	10.328365	51
9.628647	9.956684	9.671963	10.328037	50
9.628916	9.956625	9.672291	10.327709	49
9.629185	9.956566	9.672619	10.327381	48
9.629453	9.956506	9.672947	10.327053	47
9.629721	9.956447	9.673274	10.326724	46
9.629989	9.956387	9.673602	10.326396	45
9.630257	9.956327	9.673929	10.326067	44
9.630524	9.956268	9.674257	10.325743	43
9.630792	9.956208	9.674584	10.325416	42
9.631059	9.956148	9.674911	10.325089	41
9.631326	9.956089	9.675237	10.324763	40
9.631593	9.956029	9.675564	10.324436	39
9.631859	9.955969	9.675890	10.324110	38
9.632125	9.955909	9.676217	10.323783	37
9.632392	9.955849	9.676543	10.323457	36
9.632658	9.955789	9.676869	10.323131	35
9.632923	9.955729	9.677194	10.322806	34
9.633189	9.955669	9.677520	10.322480	33
9.633454	9.955609	9.677846	10.322154	32
9.633719	9.955548	9.678171	10.321829	31
9.633984	9.955488	9.678496	10.321504	30
Co-fin.	S I N.	Co-tan.	T A N.	M

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Canon Triangulorum Logarithmicus.

24.

M	S I N.	Co-fin.	T A N.	Co-tan.
30	9.617727	9.959023	9.658704	10.341296
31	9.618004	9.958965	9.659039	10.340961
32	9.618281	9.958908	9.659373	10.340627
33	9.618558	9.958850	9.659708	10.340292
34	9.618834	9.958792	9.660042	10.339958
35	9.619110	9.958734	9.660376	10.339624
36	9.619386	9.958677	9.660710	10.339290
37	9.619662	9.958619	9.661043	10.338957
38	9.619938	9.958561	9.661377	10.338623
39	9.620213	9.958503	9.661710	10.338290
40	9.620488	9.958445	9.662043	10.337957
41	9.620763	9.958387	9.662376	10.337624
42	9.621038	9.958329	9.662709	10.337291
43	9.621313	9.958271	9.663042	10.336958
44	9.621587	9.958213	9.663375	10.336625
45	9.621861	9.958154	9.663707	10.336293
46	9.622135	9.958096	9.664039	10.335961
47	9.622409	9.958038	9.664371	10.335629
48	9.622682	9.957979	9.664703	10.335297
49	9.622956	9.957921	9.665035	10.334965
50	9.623229	9.957863	9.665366	10.334634
51	9.623502	9.957804	9.665698	10.334302
52	9.623774	9.957746	9.666029	10.333971
53	9.624047	9.957687	9.666360	10.333640
54	9.624319	9.957628	9.666691	10.333309
55	9.624591	9.957570	9.667021	10.332979
56	9.624863	9.957511	9.667352	10.332648
57	9.625135	9.957452	9.667682	10.332318
58	9.625406	9.957393	9.668013	10.331987
59	9.625677	9.957335	9.668343	10.331657
60	9.625948	9.957276	9.668673	10.331327
	Co-fin.	S I N.	Co-tan.	T A N.

65.

25.

S I N.	Co-fin.	T A N.	Co-tan.
9.633984	9.955488	9.678495	10.321504
9.634249	9.955428	9.678821	10.321179
9.634514	9.955368	9.679146	10.320854
9.634778	9.955307	9.679471	10.320529
9.635042	9.955247	9.679795	10.320205
9.635305	9.955186	9.680120	10.319880
9.635570	9.955126	9.680444	10.319556
9.635834	9.955065	9.680768	10.319232
9.636097	9.955005	9.681092	10.318908
9.636360	9.954944	9.681416	10.318584
9.636623	9.954883	9.681740	10.318260
9.636886	9.954823	9.682063	10.317937
9.637148	9.954762	9.682387	10.317613
9.637411	9.954701	9.682710	10.317290
9.637673	9.954640	9.683033	10.316967
9.637935	9.954579	9.683356	10.316644
9.638197	9.954518	9.683679	10.316321
9.638458	9.954457	9.684001	10.315999
9.638720	9.954396	9.684324	10.315676
9.638981	9.954335	9.684646	10.315354
9.639242	9.954274	9.684968	10.315032
9.639503	9.954213	9.685290	10.314710
9.639764	9.954152	9.685612	10.314388
9.640024	9.954090	9.685934	10.314066
9.640284	9.954029	9.686255	10.313745
9.640544	9.953968	9.686577	10.313423
9.640804	9.953906	9.686898	10.313102
9.641064	9.953845	9.687219	10.312781
9.641324	9.953783	9.687540	10.312460
9.641583	9.953722	9.687861	10.312139
9.641842	9.953660	9.688182	10.311818
Co-fin.	S I N.	Co-tan.	T A N.

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Canon Triangulorum Logarithmicus.

26.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.641842	9.953660	9.688182	10.311818
1	9.642101	9.953599	9.688502	10.311498
2	9.642360	9.953537	9.688823	10.311177
3	9.642618	9.953475	9.689143	10.310857
4	9.642877	9.953413	9.689463	10.310537
5	9.643135	9.953352	9.689783	10.310217
6	9.643393	9.953290	9.690103	10.309897
7	9.643650	9.953228	9.690423	10.309577
8	9.643908	9.953166	9.690742	10.309258
9	9.644165	9.953104	9.691062	10.308938
10	9.644423	9.953042	9.691381	10.308619
11	9.644680	9.952980	9.691700	10.308300
12	9.644936	9.952918	9.692019	10.307981
13	9.645193	9.952855	9.692338	10.307662
14	9.645450	9.952793	9.692656	10.307344
15	9.645705	9.952731	9.692975	10.307025
16	9.645962	9.952669	9.693293	10.306707
17	9.646218	9.952606	9.693612	10.306388
18	9.646474	9.952544	9.693930	10.306070
19	9.646729	9.952481	9.694248	10.305752
20	9.646984	9.952419	9.694566	10.305434
21	9.647240	9.952356	9.694883	10.305117
22	9.647494	9.952294	9.695201	10.304799
23	9.647749	9.952231	9.695518	10.304482
24	9.648004	9.952168	9.695836	10.304164
25	9.648258	9.952106	9.696153	10.303847
26	9.648512	9.952043	9.696470	10.303530
27	9.648766	9.951980	9.696787	10.303213
28	9.649020	9.951917	9.697103	10.302897
29	9.649274	9.951854	9.697420	10.302580
30	9.649527	9.951791	9.697736	10.302264
	Co-fin.	S I N.	Co-tan.	T A N.

63.

27.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.657047	9.949881	9.707166	10.292834	60
9.657295	9.949816	9.707478	10.292522	59
9.657542	9.949752	9.707790	10.292210	58
9.657790	9.949688	9.708102	10.291898	57
9.658037	9.949623	9.708414	10.291586	56
9.658284	9.949558	9.708726	10.291274	55
9.658531	9.949494	9.709037	10.290963	54
9.658778	9.949429	9.709349	10.290651	53
9.659025	9.949364	9.709660	10.290340	52
9.659271	9.949300	9.709971	10.290029	51
9.659517	9.949235	9.710282	10.289718	50
9.659763	9.949170	9.710593	10.289407	49
9.660009	9.949105	9.710904	10.289096	48
9.660255	9.949040	9.711215	10.288785	47
9.660501	9.948975	9.711525	10.288475	46
9.660746	9.948910	9.711836	10.288164	45
9.660991	9.948845	9.712146	10.287854	44
9.661236	9.948780	9.712456	10.287544	43
9.661481	9.948715	9.712766	10.287234	42
9.661726	9.948650	9.713076	10.286924	41
9.661970	9.948584	9.713386	10.286614	40
9.662214	9.948519	9.713696	10.286304	39
9.662459	9.948454	9.714005	10.285995	38
9.662703	9.948388	9.714314	10.285686	37
9.662946	9.948323	9.714624	10.285376	36
9.663190	9.948257	9.714933	10.285067	35
9.663433	9.948192	9.715242	10.284758	34
9.663677	9.948126	9.715551	10.284449	33
9.663920	9.948060	9.715860	10.284140	32
9.664163	9.947995	9.716168	10.283832	31
9.664406	9.947929	9.716477	10.283523	30
Co-fin.	S I N.	Co-tan.	T A N.	M

62.

Canon Triangulorum Logarithmicus.

26.

27.

M	SIN.	Co-fin.	TAN.	Co-tan.	SIN.	Co-fin.	TAN.	Co-tan.	
30	9.649527	9.951791	9.697736	10.302264	9.664405	9.947929	9.716477	10.283523	20
31	9.649781	9.951728	9.698053	10.301947	9.664648	9.947863	9.716785	10.283215	29
32	9.650034	9.951665	9.698369	10.301631	9.664891	9.947797	9.717093	10.282907	28
33	9.650287	9.951602	9.698685	10.301315	9.665133	9.947731	9.717401	10.282599	27
34	9.650539	9.951539	9.699001	10.300999	9.665375	9.947665	9.717709	10.282291	26
35	9.650792	9.951476	9.699316	10.300684	9.665617	9.947600	9.718017	10.281983	25
36	9.651044	9.951412	9.699632	10.300368	9.665859	9.947533	9.718325	10.281675	24
37	9.651297	9.951349	9.699947	10.300053	9.666100	9.947467	9.718633	10.281367	23
38	9.651549	9.951286	9.700263	10.299737	9.666342	9.947401	9.718940	10.281060	22
39	9.651800	9.951222	9.700578	10.299422	9.666583	9.947335	9.719248	10.280752	21
40	9.652052	9.951159	9.700893	10.299107	9.666824	9.947269	9.719555	10.280445	20
41	9.652304	9.951096	9.701208	10.298792	9.667065	9.947203	9.719862	10.280138	19
42	9.652555	9.951032	9.701523	10.298477	9.667305	9.947136	9.720169	10.279831	18
43	9.652806	9.950968	9.701837	10.298163	9.667546	9.947070	9.720476	10.279524	17
44	9.653057	9.950905	9.702152	10.297848	9.667786	9.947004	9.720783	10.279217	16
45	9.653308	9.950841	9.702466	10.297534	9.668027	9.946937	9.721089	10.278911	15
46	9.653558	9.950778	9.702781	10.297219	9.668267	9.946871	9.721396	10.278604	14
47	9.653808	9.950714	9.703095	10.296905	9.668505	9.946804	9.721702	10.278298	13
48	9.654059	9.950650	9.703409	10.296591	9.668746	9.946738	9.722009	10.277991	12
49	9.654309	9.950586	9.703722	10.296278	9.668986	9.946671	9.722315	10.277685	11
50	9.654558	9.950522	9.704036	10.295964	9.669225	9.946604	9.722621	10.277379	10
51	9.654808	9.950458	9.704350	10.295650	9.669464	9.946538	9.722927	10.277073	9
52	9.655058	9.950394	9.704663	10.295337	9.669703	9.946471	9.723232	10.276768	8
53	9.655307	9.950330	9.704976	10.295024	9.669942	9.946404	9.723538	10.276462	7
54	9.655556	9.950266	9.705290	10.294710	9.670181	9.946337	9.723844	10.276156	6
55	9.655805	9.950202	9.705603	10.294397	9.670419	9.946270	9.724149	10.275851	5
56	9.656054	9.950138	9.705916	10.294084	9.670658	9.946203	9.724454	10.275546	4
57	9.656302	9.950074	9.706228	10.293772	9.670896	9.946136	9.724760	10.275240	3
58	9.656551	9.950010	9.706541	10.293459	9.671134	9.946069	9.725065	10.274935	2
59	9.656799	9.949945	9.706854	10.293146	9.671372	9.946002	9.725370	10.274630	1
60	9.657047	9.949881	9.707166	10.292834	9.671609	9.945935	9.725674	10.274326	0
Co-fin.	SIN.	Co-tan.	TAN.		Co-fin.	SIN.	Co-tan.	TAN.	M

63.

62.

Canon Triangulorum Logarithmicus.

28.

M	SIN.	Co-fin.	TAN.	Co-tan.
0	9.671609	9.945935	9.725674	10.274326
1	9.671847	9.945868	9.725979	10.274021
2	9.672084	9.945800	9.726284	10.273716
3	9.672321	9.945733	9.726588	10.273412
4	9.672558	9.945666	9.726892	10.273108
5	9.672795	9.945598	9.727197	10.272803
6	9.673032	9.945531	9.727501	10.272499
7	9.673268	9.945464	9.727805	10.272195
8	9.673505	9.945396	9.728109	10.271891
9	9.673741	9.945328	9.728412	10.271588
10	9.673977	9.945261	9.728716	10.271284
11	9.574213	9.945193	9.729020	10.270980
12	9.574448	9.945125	9.729323	10.270677
13	9.674684	9.945058	9.729626	10.270374
14	9.674919	9.944990	9.729929	10.270071
15	9.675155	9.944922	9.730233	10.269767
16	9.675390	9.944854	9.730535	10.269465
17	9.675624	9.944786	9.730838	10.269162
18	9.675859	9.944718	9.731141	10.268859
19	9.676094	9.944650	9.731444	10.268556
20	9.676328	9.944582	9.731746	10.268254
21	9.676562	9.944514	9.732048	10.267952
22	9.676796	9.944446	9.732351	10.267649
23	9.677030	9.944377	9.732653	10.267347
24	9.677264	9.944309	9.732955	10.267045
25	9.677498	9.944241	9.733257	10.266743
26	9.677731	9.944172	9.733558	10.266442
27	9.677964	9.944104	9.733860	10.266140
28	9.678197	9.944036	9.734162	10.265838
29	9.678430	9.943967	9.734463	10.265537
30	9.678663	9.943899	9.734764	10.265236
	Co-fin.	SIN.	Co-tan.	TAN.

61.

29.

S I N.	Co-fin.	TAN.	Co-tan.	
9.685571	9.941819	9.743752	10.256248	60
9.685799	9.941749	9.744050	10.255950	59
9.686027	9.941679	9.744348	10.255652	58
9.686254	9.941609	9.744645	10.255355	57
9.686482	9.941539	9.744943	10.255057	56
9.686709	9.941469	9.745240	10.254760	55
9.686936	9.941398	9.745538	10.254462	54
9.687163	9.941328	9.745835	10.254165	53
9.687389	9.941258	9.746132	10.253868	52
9.687616	9.941187	9.746429	10.253571	51
9.687843	9.941117	9.746726	10.253274	50
9.688069	9.941046	9.747023	10.252977	49
9.688295	9.940975	9.747319	10.252681	48
9.688521	9.940905	9.747616	10.252384	47
9.688747	9.940834	9.747913	10.252087	46
9.688972	9.940763	9.748209	10.251791	45
9.689198	9.940693	9.748505	10.251495	44
9.689423	9.940622	9.748801	10.251199	43
9.689648	9.940551	9.749097	10.250903	42
9.689873	9.940480	9.749393	10.250607	41
9.690098	9.940409	9.749689	10.250311	40
9.690323	9.940338	9.749985	10.250015	39
9.690548	9.940267	9.750281	10.249719	38
9.690772	9.940196	9.750576	10.249424	37
9.690996	9.940125	9.750872	10.249128	36
9.691220	9.940054	9.751167	10.248833	35
9.691444	9.939982	9.751462	10.248538	34
9.691668	9.939911	9.751757	10.248243	33
9.691892	9.939840	9.752052	10.247948	32
9.692115	9.939768	9.752347	10.247653	31
9.692339	9.939697	9.752642	10.247358	30
Co-fin.	S I N.	Co-tan.	T A N.	M.

60.

Canon Triangulorum Logarithmicus.

28.

M	S I N.	Co-fin.	T A N.	Co-tan.
30	9.678663	9.943899	9.734764	10.265236
31	9.678895	9.943830	9.735066	10.264934
32	9.679128	9.943761	9.735367	10.264633
33	9.679360	9.943693	9.735668	10.264332
34	9.679592	9.943624	9.735969	10.264031
35	9.679824	9.943555	9.736269	10.263731
36	9.680056	9.943486	9.736570	10.263430
37	9.680288	9.943417	9.736870	10.263130
38	9.680519	9.943348	9.737171	10.262829
39	9.680750	9.943279	9.737471	10.262529
40	9.680982	9.943210	9.737771	10.262229
41	9.681213	9.943141	9.738071	10.261929
42	9.681443	9.943072	9.738371	10.261629
43	9.681674	9.943003	9.738671	10.261329
44	9.681905	9.942934	9.738971	10.261029
45	9.682135	9.942864	9.739271	10.260729
46	9.682365	9.942795	9.739570	10.260430
47	9.682595	9.942726	9.739870	10.260130
48	9.682825	9.942656	9.740169	10.259831
49	9.683055	9.942587	9.740468	10.259532
50	9.683284	9.942517	9.740767	10.259233
51	9.683514	9.942448	9.741066	10.258934
52	9.683743	9.942378	9.741365	10.258635
53	9.683972	9.942308	9.741664	10.258336
54	9.684201	9.942239	9.741962	10.258038
55	9.684430	9.942169	9.742261	10.257739
56	9.684658	9.942099	9.742559	10.257441
57	9.684887	9.942029	9.742858	10.257142
58	9.685115	9.941959	9.743156	10.256844
59	9.685343	9.941889	9.743454	10.256546
60	9.685571	9.941819	9.743752	10.256248
	Co-fin.	S I N.	Co-tan.	T A N.

61.

29.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.692339	9.939697	9.752642	10.247358	30
9.692562	9.939625	9.752937	10.247063	29
9.692785	9.939554	9.753231	10.246769	28
9.693008	9.939482	9.753526	10.246474	27
9.693231	9.939410	9.753820	10.246180	26
9.693453	9.939339	9.754115	10.245885	25
9.693676	9.939267	9.754409	10.245591	24
9.693898	9.939195	9.754703	10.245297	23
9.694120	9.939123	9.754997	10.245003	22
9.694342	9.939052	9.755291	10.244709	21
9.694564	9.938980	9.755585	10.244415	20
9.694786	9.938908	9.755878	10.244122	19
9.695007	9.938836	9.756172	10.243828	18
9.695229	9.938763	9.756465	10.243535	17
9.695450	9.938691	9.756759	10.243241	16
9.695671	9.938619	9.757052	10.242948	15
9.695892	9.938547	9.757345	10.242655	14
9.696113	9.938475	9.757638	10.242362	13
9.696334	9.938402	9.757931	10.242069	12
9.696554	9.938330	9.758224	10.241776	11
9.696775	9.938258	9.758517	10.241483	10
9.696995	9.938185	9.758810	10.241190	9
9.697215	9.938113	9.759102	10.240898	8
9.697435	9.938040	9.759395	10.240605	7
9.697654	9.937967	9.759687	10.240313	6
9.697874	9.937895	9.759979	10.240021	5
9.698094	9.937822	9.760272	10.239728	4
9.698313	9.937749	9.760564	10.239436	3
9.698532	9.937676	9.760856	10.239144	2
9.698751	9.937604	9.761148	10.238852	1
9.698970	9.937531	9.761439	10.238561	0
Co-fin.	S I N.	Co-tan.	T A N.	M

60.

Canon Triangulorum Logarithmicus.

30.

M	SIN.	Co-fin.	TAN.	Co-tan.
0	9.698970	9.937531	9.761439	10.238561
1	9.699189	9.937458	9.761731	10.238269
2	9.699407	9.937385	9.762023	10.237977
3	9.699626	9.937312	9.762314	10.237686
4	9.699844	9.937238	9.762606	10.237394
5	9.700062	9.937165	9.762897	10.237103
6	9.700280	9.937092	9.763188	10.236812
7	9.700498	9.937019	9.763479	10.236521
8	9.700716	9.936946	9.763770	10.236230
9	9.700933	9.936872	9.764061	10.235939
10	9.701151	9.936799	9.764352	10.235648
11	9.701368	9.936725	9.764643	10.235357
12	9.701585	9.936652	9.764933	10.235067
13	9.701802	9.936578	9.765224	10.234776
14	9.702019	9.936505	9.765514	10.234486
15	9.702236	9.936431	9.765805	10.234195
16	9.702452	9.936357	9.766095	10.233905
17	9.702669	9.936284	9.766385	10.233615
18	9.702885	9.936210	9.766675	10.233325
19	9.703101	9.936136	9.766965	10.233035
20	9.703317	9.936062	9.767255	10.232745
21	9.703533	9.935988	9.767545	10.232455
22	9.703749	9.935914	9.767834	10.232166
23	9.703964	9.935840	9.768124	10.231876
24	9.704179	9.935766	9.768414	10.231586
25	9.704395	9.935692	9.768703	10.231297
26	9.704610	9.935618	9.768992	10.231008
27	9.704825	9.935543	9.769281	10.230719
28	9.705040	9.935469	9.769571	10.230429
29	9.705254	9.935395	9.769860	10.230140
30	9.705469	9.935320	9.770148	10.229852
	Co-fin.	SIN.	Co-tan.	TAN.

59.

31.

SIN.	Co-fin.	TAN.	Co-tan.
9.711839	9.933066	9.778774	10.221226
9.712050	9.932990	9.779060	10.220940
9.712260	9.932914	9.779346	10.220654
9.712469	9.932838	9.779632	10.220368
9.712679	9.932762	9.779918	10.220082
9.712889	9.932685	9.780203	10.219797
9.713098	9.932609	9.780489	10.219511
9.713308	9.932533	9.780775	10.219225
9.713517	9.932457	9.781060	10.218940
9.713726	9.932380	9.781346	10.218654
9.713935	9.932304	9.781631	10.218369
9.714144	9.932228	9.781916	10.218084
9.714352	9.932151	9.782201	10.217799
9.714561	9.932075	9.782486	10.217514
9.714769	9.931998	9.782771	10.217229
9.714978	9.931921	9.783056	10.216944
9.715186	9.931845	9.783341	10.216659
9.715394	9.931768	9.783626	10.216374
9.715602	9.931691	9.783910	10.216090
9.715809	9.931614	9.784195	10.215805
9.716017	9.931537	9.784479	10.215521
9.716224	9.931460	9.784764	10.215236
9.716432	9.931383	9.785048	10.214952
9.716639	9.931306	9.785332	10.214668
9.716846	9.931229	9.785616	10.214384
9.717053	9.931152	9.785900	10.214100
9.717259	9.931075	9.786184	10.213816
9.717466	9.930998	9.786468	10.213532
9.717673	9.930921	9.786752	10.213248
9.717879	9.930843	9.787036	10.212964
9.718085	9.930766	9.787319	10.212681
Co-fin.	SIN.	Co-tan.	TAN.

58.

Canon Triangulorum Logarithmicus.

30.					31.				
M	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	M
30	9.705469	9.935320	9.770148	10.229852	9.718085	9.930766	9.787319	10.212681	30
31	9.705683	9.935246	9.770437	10.229563	9.718291	9.930688	9.787603	10.212397	29
32	9.705898	9.935171	9.770726	10.229274	9.718497	9.930611	9.787886	10.212114	28
33	9.706112	9.935097	9.771015	10.228985	9.718703	9.930533	9.788170	10.211830	27
34	9.706326	9.935022	9.771303	10.228697	9.718909	9.930456	9.788453	10.211547	26
35	9.706539	9.934948	9.771592	10.228408	9.719114	9.930378	9.788736	10.211264	25
36	9.706753	9.934873	9.771880	10.228120	9.719320	9.930300	9.789019	10.210981	24
37	9.706967	9.934798	9.772168	10.227832	9.719525	9.930223	9.789302	10.210698	23
38	9.707180	9.934723	9.772457	10.227543	9.719730	9.930145	9.789585	10.210415	22
39	9.707393	9.934649	9.772745	10.227255	9.719935	9.930067	9.789868	10.210132	21
40	9.707606	9.934574	9.773033	10.226967	9.720140	9.929989	9.790151	10.209849	20
41	9.707819	9.934499	9.773321	10.226679	9.720345	9.929911	9.790434	10.209566	19
42	9.708032	9.934424	9.773608	10.226392	9.720549	9.929833	9.790716	10.209284	18
43	9.708245	9.934349	9.773896	10.226104	9.720754	9.929755	9.790999	10.209001	17
44	9.708458	9.934274	9.774184	10.225816	9.720958	9.929677	9.791281	10.208719	16
45	9.708670	9.934199	9.774471	10.225529	9.721162	9.929599	9.791563	10.208437	15
46	9.708882	9.934123	9.774759	10.225241	9.721366	9.929521	9.791846	10.208154	14
47	9.709094	9.934048	9.775046	10.224954	9.721570	9.929442	9.792128	10.207872	13
48	9.709306	9.933973	9.775333	10.224667	9.721774	9.929364	9.792410	10.207590	12
49	9.709518	9.933898	9.775621	10.224379	9.721978	9.929286	9.792692	10.207308	11
50	9.709730	9.933822	9.775908	10.224092	9.722181	9.929207	9.792974	10.207026	10
51	9.709941	9.933747	9.776195	10.223805	9.722385	9.929129	9.793256	10.206744	9
52	9.710153	9.933671	9.776482	10.223518	9.722588	9.929050	9.793538	10.206462	8
53	9.710364	9.933596	9.776768	10.223232	9.722791	9.928972	9.793819	10.206181	7
54	9.710575	9.933520	9.777055	10.222945	9.722994	9.928893	9.794101	10.205899	6
55	9.710786	9.933445	9.777342	10.222658	9.723197	9.928815	9.794383	10.205617	5
56	9.710997	9.933369	9.777628	10.222372	9.723400	9.928736	9.794664	10.205336	4
57	9.711208	9.933293	9.777915	10.222085	9.723603	9.928657	9.794946	10.205054	3
58	9.711419	9.933217	9.778201	10.221799	9.723805	9.928578	9.795227	10.204773	2
59	9.711629	9.933141	9.778488	10.221512	9.724007	9.928499	9.795508	10.204492	1
60	9.711839	9.933066	9.778774	10.221226	9.724210	9.928420	9.795789	10.204211	0
Co-fin.	S I N.	Co-tan.	T A N.		Co-fin.	S I N.	Co-tan.	T A N.	M

59.

58.

Canon Triangulorum Logarithmicus.

32.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.724210	9.928420	9.795789	10.204211
1	9.724412	9.928342	9.796070	10.203930
2	9.724614	9.928263	9.796351	10.203649
3	9.724816	9.928183	9.796632	10.203368
4	9.725017	9.928104	9.796913	10.203087
5	9.725219	9.928025	9.797194	10.202806
6	9.725420	9.927946	9.797474	10.202526
7	9.725622	9.927867	9.797755	10.202245
8	9.725823	9.927787	9.798036	10.201964
9	9.726024	9.927708	9.798316	10.201684
10	9.726225	9.927629	9.798596	10.201404
11	9.726426	9.927549	9.798877	10.201123
12	9.726626	9.927470	9.799157	10.200843
13	9.726827	9.927390	9.799437	10.200563
14	9.727027	9.927310	9.799717	10.200283
15	9.727228	9.927231	9.799997	10.200003
16	9.727428	9.927151	9.800277	10.199723
17	9.727628	9.927071	9.800557	10.199443
18	9.727828	9.926991	9.800836	10.199164
19	9.728027	9.926911	9.801116	10.198884
20	9.728227	9.926831	9.801396	10.198604
21	9.728427	9.926751	9.801675	10.198325
22	9.728626	9.926671	9.801955	10.198045
23	9.728825	9.926591	9.802234	10.197766
24	9.729024	9.926511	9.802513	10.197487
25	9.729223	9.926431	9.802792	10.197208
26	9.729422	9.926351	9.803072	10.196928
27	9.729621	9.926270	9.803351	10.196649
28	9.729820	9.926190	9.803630	10.196370
29	9.730018	9.926110	9.803909	10.196091
30	9.730217	9.926029	9.804187	10.195813
	Co-fin.	S I N.	Co-tan.	T A N.

57.

33.

S I N.	Co-fin.	T A N.	Co-tan.	
9.736109	9.923591	9.812517	10.187483	60
9.736303	9.923509	9.812794	10.187206	59
9.736498	9.923427	9.813070	10.186930	58
9.736692	9.923345	9.813347	10.186653	57
9.736886	9.923263	9.813623	10.186377	56
9.737080	9.923181	9.813899	10.186101	55
9.737274	9.923098	9.814176	10.185824	54
9.737467	9.923016	9.814452	10.185548	53
9.737661	9.922933	9.814728	10.185272	52
9.737855	9.922851	9.815004	10.184996	51
9.738048	9.922768	9.815280	10.184720	50
9.738241	9.922686	9.815555	10.184445	49
9.738434	9.922603	9.815831	10.184169	48
9.738627	9.922520	9.816107	10.183893	47
9.738820	9.922438	9.816382	10.183618	46
9.739013	9.922355	9.816658	10.183342	45
9.739206	9.922272	9.816933	10.183067	44
9.739398	9.922189	9.817209	10.182791	43
9.739590	9.922106	9.817484	10.182516	42
9.739783	9.922023	9.817759	10.182241	41
9.739975	9.921940	9.818035	10.181965	40
9.740167	9.921857	9.818310	10.181690	39
9.740359	9.921774	9.818585	10.181415	38
9.740550	9.921691	9.818860	10.181140	37
9.740742	9.921607	9.819135	10.180865	36
9.740934	9.921524	9.819410	10.180590	35
9.741125	9.921441	9.819684	10.180316	34
9.741316	9.921357	9.819959	10.180041	33
9.741508	9.921274	9.820234	10.179766	32
9.741699	9.921190	9.820508	10.179492	31
9.741889	9.921107	9.820783	10.179217	30
Co-fin.	S I N.	Co-tan.	T A N.	M

56.

Canon Triangulorum Logarithmicus.

32.

M	S I N.	Co-fin.	T A N.	Co-tan.
30	9.730217	9.926029	9.804187	10.195813
31	9.730415	9.925949	9.804466	10.195534
32	9.730513	9.925868	9.804745	10.195255
33	9.730811	9.925788	9.805023	10.194977
34	9.731009	9.925707	9.805302	10.194698
35	9.731206	9.925626	9.805580	10.194420
36	9.731404	9.925545	9.805859	10.194141
37	9.731602	9.925465	9.806137	10.193863
38	9.731799	9.925384	9.806415	10.193585
39	9.731996	9.925303	9.806693	10.193307
40	9.732193	9.925222	9.806971	10.193029
41	9.732390	9.925141	9.807249	10.192751
42	9.732587	9.925060	9.807527	10.192473
43	9.732784	9.924979	9.807805	10.192195
44	9.732980	9.924897	9.808083	10.191917
45	9.733177	9.924816	9.808361	10.191639
46	9.733373	9.924735	9.808638	10.191362
47	9.733569	9.924654	9.808916	10.191084
48	9.733765	9.924572	9.809193	10.190807
49	9.733961	9.924491	9.809471	10.190529
50	9.734157	9.924409	9.809748	10.190252
51	9.734353	9.924328	9.810025	10.189975
52	9.734549	9.924246	9.810302	10.189698
53	9.734744	9.924164	9.810580	10.189420
54	9.734939	9.924083	9.810857	10.189143
55	9.735135	9.924001	9.811134	10.188866
56	9.735330	9.923919	9.811410	10.188590
57	9.735525	9.923837	9.811687	10.188313
58	9.735719	9.923755	9.811964	10.188036
59	9.735914	9.923673	9.812241	10.187759
60	9.736109	9.923591	9.812517	10.187483
	Co-fin.	S I N.	Co-tan.	T A N.

57.

33.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.741889	9.921107	9.820783	10.179217	30
9.742080	9.921023	9.821057	10.178943	29
9.742271	9.920939	9.821332	10.178668	28
9.742462	9.920856	9.821606	10.178394	27
9.742652	9.920772	9.821880	10.178120	26
9.742842	9.920688	9.822154	10.177846	25
9.743033	9.920604	9.822429	10.177571	24
9.743223	9.920520	9.822703	10.177297	23
9.743413	9.920436	9.822977	10.177023	22
9.743602	9.920352	9.823251	10.176749	21
9.743792	9.920268	9.823524	10.176476	20
9.743982	9.920184	9.823798	10.176202	19
9.744171	9.920099	9.824072	10.175928	18
9.744361	9.920015	9.824345	10.175655	17
9.744550	9.919931	9.824619	10.175381	16
9.744739	9.919846	9.824893	10.175107	15
9.744928	9.919762	9.825166	10.174834	14
9.745117	9.919677	9.825439	10.174561	13
9.745306	9.919593	9.825713	10.174287	12
9.745494	9.919508	9.825986	10.174014	11
9.745683	9.919424	9.826259	10.173741	10
9.745871	9.919339	9.826532	10.173468	9
9.746060	9.919254	9.826805	10.173195	8
9.746248	9.919169	9.827078	10.172922	7
9.746436	9.919085	9.827351	10.172649	6
9.746624	9.919000	9.827624	10.172376	5
9.746812	9.918915	9.827897	10.172103	4
9.746999	9.918830	9.828170	10.171830	3
9.747187	9.918745	9.828442	10.171558	2
9.747374	9.918659	9.828715	10.171285	1
9.747562	9.918574	9.828987	10.171013	0
Co-fin.	S I N.	Co-tan.	T A N.	M

56.

Canon Triangulorum Logarithmicus.

34.

M	S I N.	Co-fin.	T A N.	Co-tan.
0	9.747562	9.918574	9.828987	10.171013
1	9.747749	9.918489	9.829260	10.170740
2	9.747936	9.918404	9.829532	10.170468
3	9.748123	9.918318	9.829805	10.170195
4	9.748310	9.918233	9.830077	10.169923
5	9.748497	9.918147	9.830349	10.169651
6	9.748683	9.918062	9.830621	10.169379
7	9.748870	9.917976	9.830893	10.169107
8	9.749056	9.917891	9.831165	10.168835
9	9.749243	9.917805	9.831437	10.168563
10	9.749429	9.917719	9.831709	10.168291
11	9.749615	9.917634	9.831981	10.168019
12	9.749801	9.917548	9.832253	10.167747
13	9.749987	9.917462	9.832525	10.167475
14	9.750172	9.917376	9.832796	10.167204
15	9.750358	9.917290	9.833068	10.166932
16	9.750543	9.917204	9.833339	10.166661
17	9.750729	9.917118	9.833611	10.166389
18	9.750914	9.917032	9.833882	10.166118
19	9.751099	9.916946	9.834154	10.165846
20	9.751284	9.916859	9.834425	10.165575
21	9.751469	9.916773	9.834696	10.165304
22	9.751654	9.916687	9.834967	10.165033
23	9.751839	9.916600	9.835238	10.164762
24	9.752023	9.916514	9.835509	10.164491
25	9.752208	9.916427	9.835780	10.164220
26	9.752392	9.916341	9.836051	10.163949
27	9.752576	9.916254	9.836322	10.163678
28	9.752760	9.916167	9.836593	10.163407
29	9.752944	9.916081	9.836864	10.163136
30	9.753128	9.915994	9.837134	10.162866
	Co-fin.	S I N.	Co-tan.	T A N.

55.

35.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.758591	9.913365	9.845227	10.154773	60
9.758772	9.913276	9.845496	10.154504	59
9.758952	9.913187	9.845764	10.154236	58
9.759132	9.913099	9.846033	10.153967	57
9.759312	9.913010	9.846302	10.153698	56
9.759492	9.912922	9.846570	10.153430	55
9.759672	9.912833	9.846839	10.153161	54
9.759852	9.912744	9.847108	10.152892	53
9.760031	9.912655	9.847376	10.152624	52
9.760211	9.912566	9.847644	10.152356	51
9.760390	9.912477	9.847913	10.152087	50
9.760569	9.912388	9.848181	10.151819	49
9.760748	9.912299	9.848449	10.151551	48
9.760927	9.912210	9.848717	10.151283	47
9.761106	9.912121	9.848986	10.151014	46
9.761285	9.912031	9.849254	10.150746	45
9.761464	9.911942	9.849522	10.150478	44
9.761642	9.911853	9.849790	10.150210	43
9.761821	9.911763	9.850057	10.149943	42
9.761999	9.911674	9.850325	10.149675	41
9.762177	9.911584	9.850593	10.149407	40
9.762356	9.911495	9.850861	10.149139	39
9.762534	9.911405	9.851129	10.148871	38
9.762712	9.911315	9.851396	10.148604	37
9.762889	9.911226	9.851664	10.148336	36
9.763067	9.911136	9.851931	10.148069	35
9.763245	9.911046	9.852199	10.147801	34
9.763422	9.910956	9.852466	10.147534	33
9.763600	9.910866	9.852733	10.147267	32
9.763777	9.910776	9.853001	10.146999	31
9.763954	9.910686	9.853268	10.146732	30
Co-fin.	S I N.	Co-tan.	T A N.	M

54.

Canon Triangulorum Logarithmicus.

34.

M	SIN.	Co-fin.	TAN.	Co-tan.
30	9.753128	9.915994	9.837134	10.162866
31	9.753312	9.915907	9.837405	10.162595
32	9.753495	9.915820	9.837675	10.162325
33	9.753679	9.915733	9.837946	10.162054
34	9.753862	9.915646	9.838216	10.161784
35	9.754046	9.915559	9.838487	10.161513
36	9.754229	9.915472	9.838757	10.161243
37	9.754412	9.915385	9.839027	10.160973
38	9.754595	9.915297	9.839297	10.160703
39	9.754778	9.915210	9.839568	10.160432
40	9.754960	9.915123	9.839838	10.160162
41	9.755143	9.915035	9.840108	10.159892
42	9.755326	9.914948	9.840378	10.159622
43	9.755508	9.914860	9.840648	10.159352
44	9.755690	9.914773	9.840917	10.159083
45	9.755872	9.914685	9.841187	10.158813
46	9.756054	9.914598	9.841457	10.158543
47	9.756236	9.914510	9.841727	10.158273
48	9.756418	9.914422	9.841996	10.158004
49	9.756600	9.914334	9.842266	10.157734
50	9.756782	9.914246	9.842535	10.157465
51	9.756963	9.914158	9.842805	10.157195
52	9.757144	9.914070	9.843074	10.156926
53	9.757326	9.913982	9.843343	10.156657
54	9.757507	9.913894	9.843612	10.156388
55	9.757688	9.913806	9.843882	10.156118
56	9.757869	9.913718	9.844151	10.155849
57	9.758050	9.913630	9.844420	10.155580
58	9.758230	9.913541	9.844689	10.155311
59	9.758411	9.913453	9.844958	10.155042
60	9.758591	9.913365	9.845227	10.154773
	Co-fin.	SIN.	Co-tan.	TAN.

55.

35.

SIN.	Co-fin.	TAN.	Co-tan.	
9.763954	9.910686	9.853268	10.146732	32
9.764131	9.910596	9.853535	10.146465	29
9.764308	9.910505	9.853802	10.146198	28
9.764485	9.910415	9.854059	10.145931	27
9.764662	9.910325	9.854336	10.145664	26
9.764838	9.910235	9.854603	10.145397	25
9.765015	9.910144	9.854870	10.145130	24
9.765191	9.910054	9.855137	10.144863	23
9.765367	9.909963	9.855404	10.144596	22
9.765544	9.909873	9.855671	10.144329	21
9.765720	9.909782	9.855938	10.144062	20
9.765896	9.909691	9.856204	10.143795	19
9.766072	9.909601	9.856471	10.143529	18
9.766247	9.909510	9.856737	10.143263	17
9.766423	9.909419	9.857004	10.142996	16
9.766598	9.909328	9.857270	10.142730	15
9.766774	9.909237	9.857537	10.142463	14
9.766949	9.909146	9.857803	10.142197	13
9.767124	9.909055	9.858069	10.141931	12
9.767300	9.908964	9.858336	10.141664	11
9.767475	9.908873	9.858602	10.141398	10
9.767649	9.908781	9.858868	10.141132	9
9.767824	9.908690	9.859134	10.140866	8
9.767999	9.908599	9.859400	10.140600	7
9.768173	9.908507	9.859666	10.140334	6
9.768348	9.908416	9.859932	10.140068	5
9.768522	9.908324	9.860198	10.139802	4
9.768697	9.908233	9.860464	10.139536	3
9.768871	9.908141	9.860730	10.139270	2
9.769045	9.908049	9.860995	10.139005	1
9.769219	9.907958	9.861261	10.138739	0
Co-fin.	SIN.	Co-tan.	TAN.	M

54.

Canon Triangulorum Logarithmicus.

26

M	SIN.	Co-fin.	TAN.	Co-tan.
0	9.769219	9.907958	9.861261	10.138739
1	9.769393	9.907866	9.861527	10.138473
2	9.769566	9.907774	9.861792	10.138208
3	9.769740	9.907682	9.862058	10.137942
4	9.769913	9.907590	9.862323	10.137677
5	9.770087	9.907498	9.862589	10.137411
6	9.770260	9.907406	9.862854	10.137146
7	9.770433	9.907314	9.863119	10.136881
8	9.770606	9.907222	9.863385	10.136615
9	9.770779	9.907129	9.863650	10.136350
10	9.770952	9.907037	9.863915	10.136085
11	9.771125	9.906945	9.864180	10.135820
12	9.771298	9.906852	9.864445	10.135555
13	9.771470	9.906760	9.864710	10.135290
14	9.771643	9.906667	9.864975	10.135025
15	9.771815	9.906575	9.865240	10.134760
16	9.771987	9.906482	9.865505	10.134495
17	9.772159	9.906389	9.865770	10.134230
18	9.772331	9.906296	9.866035	10.133965
19	9.772503	9.906204	9.866300	10.133700
20	9.772675	9.906111	9.866564	10.133436
21	9.772847	9.906018	9.866829	10.133171
22	9.773018	9.905925	9.867094	10.132906
23	9.773190	9.905832	9.867358	10.132642
24	9.773361	9.905739	9.867623	10.132377
25	9.773533	9.905645	9.867887	10.132113
26	9.773704	9.905552	9.868152	10.131848
27	9.773875	9.905459	9.868416	10.131584
28	9.774046	9.905366	9.868680	10.131320
29	9.774217	9.905272	9.868945	10.131055
30	9.774388	9.905179	9.869209	10.130791
	Co-fin.	SIN.	Co-tan.	TAN.

53.

37.

SIN.	Co-fin.	TAN.	Co-tan.	M
9.779463	9.902349	9.877114	10.122886	60
9.779631	9.902253	9.877377	10.122623	59
9.779798	9.902158	9.877640	10.122360	58
9.779966	9.902063	9.877903	10.122097	57
9.780133	9.901967	9.878165	10.121835	56
9.780300	9.901872	9.878428	10.121572	55
9.780467	9.901776	9.878691	10.121309	54
9.780634	9.901681	9.878953	10.121047	53
9.780801	9.901585	9.879216	10.120784	52
9.780968	9.901490	9.879478	10.120522	51
9.781134	9.901394	9.879741	10.120259	50
9.781301	9.901298	9.880003	10.119997	49
9.781468	9.901202	9.880265	10.119735	48
9.781634	9.901106	9.880528	10.119472	47
9.781800	9.901010	9.880790	10.119210	46
9.781966	9.900914	9.881052	10.118948	45
9.782132	9.900818	9.881314	10.118686	44
9.782298	9.900722	9.881577	10.118423	43
9.782464	9.900626	9.881839	10.118161	42
9.782630	9.900529	9.882101	10.117899	41
9.782796	9.900433	9.882363	10.117637	40
9.782961	9.900337	9.882625	10.117375	39
9.783127	9.900240	9.882887	10.117113	38
9.783292	9.900144	9.883148	10.116852	37
9.783458	9.900047	9.883410	10.116590	36
9.783623	9.899951	9.883672	10.116328	35
9.783788	9.899854	9.883934	10.116066	34
9.783953	9.899757	9.884196	10.115804	33
9.784118	9.899660	9.884457	10.115543	32
9.784282	9.899564	9.884719	10.115281	31
9.784447	9.899467	9.884980	10.115020	30
Co-fin.	SIN.	Co-tan.	TAN.	M

52.

Canon Triangulorum Logarithmicus.

36.

M	S I N.	Co-fin.	T A N.	Co-tan.
30	9.774388	9.905179	9.869209	10.130791
31	9.774558	9.905085	9.869473	10.130527
32	9.774729	9.904992	9.869737	10.130263
33	9.774899	9.904898	9.870001	10.129999
34	9.775070	9.904804	9.870265	10.129735
35	9.775240	9.904711	9.870529	10.129471
36	9.775410	9.904617	9.870793	10.129207
37	9.775580	9.904523	9.871057	10.128943
38	9.775750	9.904429	9.871321	10.128679
39	9.775920	9.904335	9.871585	10.128415
40	9.776090	9.904241	9.871849	10.128151
41	9.776259	9.904147	9.872112	10.127888
42	9.776429	9.904053	9.872376	10.127624
43	9.776598	9.903959	9.872640	10.127360
44	9.776768	9.903864	9.872903	10.127097
45	9.776937	9.903770	9.873167	10.126833
46	9.777106	9.903676	9.873430	10.126570
47	9.777275	9.903581	9.873694	10.126306
48	9.777444	9.903487	9.873957	10.126043
49	9.777613	9.903392	9.874220	10.125780
50	9.777781	9.903298	9.874484	10.125516
51	9.777950	9.903203	9.874747	10.125253
52	9.778119	9.903108	9.875010	10.124990
53	9.778287	9.903014	9.875273	10.124727
54	9.778455	9.902919	9.875537	10.124463
55	9.778624	9.902824	9.875800	10.124200
56	9.778792	9.902729	9.876063	10.123937
57	9.778960	9.902634	9.876326	10.123674
58	9.779128	9.902539	9.876589	10.123411
59	9.779295	9.902444	9.876852	10.123148
60	9.779463	9.902349	9.877114	10.122886
	Co-fin.	S I N.	Co-tan.	T A N.

53.

37.

S I N.	Co-fin.	T A N.	Co-tan.	M
9.784447	9.899467	9.884980	10.115020	30
9.784612	9.899370	9.885242	10.114758	29
9.784776	9.899273	9.885504	10.114496	28
9.784941	9.899176	9.885765	10.114235	27
9.785105	9.899078	9.886026	10.113974	26
9.785269	9.898981	9.886288	10.113712	25
9.785433	9.898884	9.886549	10.113451	24
9.785597	9.898787	9.886811	10.113189	23
9.785761	9.898689	9.887072	10.112928	22
9.785925	9.898592	9.887333	10.112667	21
9.786089	9.898494	9.887594	10.112406	20
9.786252	9.898397	9.887855	10.112145	19
9.786416	9.898299	9.888116	10.111884	18
9.786579	9.898202	9.888378	10.111622	17
9.786742	9.898104	9.888639	10.111361	16
9.786906	9.898006	9.888900	10.111100	15
9.787069	9.897908	9.889161	10.110839	14
9.787232	9.897810	9.889421	10.110579	13
9.787395	9.897712	9.889682	10.110318	12
9.787557	9.897614	9.889943	10.110057	11
9.787720	9.897516	9.890204	10.109796	10
9.787883	9.897418	9.890465	10.109535	9
9.788045	9.897320	9.890725	10.109275	8
9.788208	9.897222	9.890986	10.109014	7
9.788370	9.897123	9.891247	10.108753	6
9.788532	9.897025	9.891507	10.108493	5
9.788694	9.896926	9.891768	10.108232	4
9.788856	9.896828	9.892028	10.107972	3
9.789018	9.896729	9.892289	10.107711	2
9.789180	9.896631	9.892549	10.107451	1
9.789342	9.896532	9.892810	10.107190	0
Co-fin.	S I N.	Co-tan.	T A N.	M

52.

Canon Triangulorum Logarithmicus.

38.					39.				
M	SIN.	Co-fin.	TAN.	Co-tan.	SIN.	Co-fin.	TAN.	Co-tan.	M
0	9.789342	9.896532	9.892810	10.107190	9.798872	9.890503	9.908369	10.091631	60
1	9.789504	9.896433	9.893070	10.106930	9.799028	9.890400	9.908628	10.091372	59
2	9.789665	9.896335	9.893331	10.106669	9.799184	9.890298	9.908886	10.091114	58
3	9.789827	9.896236	9.893591	10.106409	9.799339	9.890195	9.909144	10.090856	57
4	9.789988	9.896137	9.893851	10.106149	9.799495	9.890093	9.909402	10.090598	56
5	9.790149	9.896038	9.894111	10.105889	9.799651	9.889990	9.909660	10.090340	55
6	9.790310	9.895939	9.894372	10.105628	9.799806	9.889888	9.909918	10.090082	54
7	9.790471	9.895840	9.894632	10.105368	9.799962	9.889785	9.910177	10.089823	53
8	9.790632	9.895741	9.894892	10.105108	9.800117	9.889682	9.910435	10.089565	52
9	9.790793	9.895641	9.895152	10.104848	9.800272	9.889579	9.910693	10.089307	51
10	9.790954	9.895542	9.895412	10.104588	9.800427	9.889477	9.910951	10.089049	50
11	9.791115	9.895443	9.895672	10.104328	9.800582	9.889374	9.911209	10.088791	49
12	9.791275	9.895343	9.895932	10.104068	9.800737	9.889271	9.911467	10.088533	48
13	9.791436	9.895244	9.896192	10.103808	9.800892	9.889168	9.911725	10.088275	47
14	9.791596	9.895145	9.896452	10.103548	9.801047	9.889064	9.911982	10.088018	46
15	9.791757	9.895045	9.896712	10.103288	9.801201	9.888961	9.912240	10.087760	45
16	9.791917	9.894945	9.896971	10.103029	9.801356	9.888858	9.912498	10.087502	44
17	9.792077	9.894846	9.897231	10.102769	9.801515	9.888755	9.912756	10.087244	43
18	9.792237	9.894746	9.897491	10.102509	9.801661	9.888651	9.913014	10.086986	42
19	9.792397	9.894646	9.897751	10.102249	9.801819	9.888548	9.913271	10.086729	41
20	9.792557	9.894546	9.898010	10.101990	9.801973	9.888444	9.913529	10.086471	40
21	9.792716	9.894446	9.898270	10.101730	9.802128	9.888341	9.913787	10.086213	39
22	9.792876	9.894346	9.898530	10.101470	9.802282	9.888237	9.914044	10.085956	38
23	9.793035	9.894246	9.898789	10.101211	9.802436	9.888134	9.914302	10.085698	37
24	9.793195	9.894146	9.899049	10.100951	9.802589	9.888030	9.914560	10.085440	36
25	9.793354	9.894046	9.899308	10.100692	9.802743	9.887926	9.914817	10.085183	35
26	9.793514	9.893946	9.899568	10.100432	9.802897	9.887822	9.915075	10.084925	34
27	9.793673	9.893846	9.899827	10.100173	9.803050	9.887718	9.915332	10.084668	33
28	9.793832	9.893745	9.900087	10.099913	9.803204	9.887614	9.915590	10.084410	32
29	9.793991	9.893645	9.900346	10.099654	9.803357	9.887510	9.915847	10.084153	31
30	9.794150	9.893544	9.900605	10.099395	9.803511	9.887405	9.916104	10.083895	30
	Co-fin.	SIN.	Co-tan.	TAN.	Co-fin.	SIN.	Co-tan.	TAN.	M
51.					50.				

Canon Triangulorum Logarithmicus.

38.

N.	S I N.	Co-fin.	TAN.	Co-tan.
30	9.794150	9.893544	9.900605	10.099395
31	9.794308	9.893444	9.900864	10.099136
32	9.794467	9.893343	9.901124	10.098876
33	9.794626	9.893243	9.901383	10.098617
34	9.794784	9.893142	9.901642	10.098358
35	9.794942	9.893041	9.901901	10.098099
36	9.795101	9.892940	9.902160	10.097840
37	9.795259	9.892839	9.902420	10.097580
38	9.795417	9.892739	9.902679	10.097321
39	9.795575	9.892638	9.902938	10.097062
40	9.795733	9.892536	9.903197	10.096803
41	9.795891	9.892435	9.903456	10.096544
42	9.796049	9.892334	9.903714	10.096286
43	9.796206	9.892233	9.903973	10.096027
44	9.796364	9.892132	9.904232	10.095768
45	9.796521	9.892030	9.904491	10.095509
46	9.796679	9.891929	9.904750	10.095250
47	9.796836	9.891827	9.905008	10.094992
48	9.796993	9.891726	9.905267	10.094733
49	9.797150	9.891624	9.905526	10.094474
50	9.797307	9.891523	9.905785	10.094215
51	9.797464	9.891421	9.906043	10.093957
52	9.797621	9.891319	9.906302	10.093698
53	9.797777	9.891217	9.906560	10.093440
54	9.797934	9.891115	9.906819	10.093181
55	9.798091	9.891013	9.907077	10.092923
56	9.798247	9.890911	9.907336	10.092664
57	9.798403	9.890809	9.907594	10.092406
58	9.798560	9.890707	9.907853	10.092147
59	9.798716	9.890605	9.908111	10.091889
60	9.798872	9.890503	9.908369	10.091631
	Co-fin.	S I N.	Co-tan.	TAN.

51.

39.

S I N.	Co-fin.	TAN.	Co-tan.
9.803511	9.887406	9.916104	10.083895
9.803664	9.887302	9.916362	10.083638
9.803817	9.887198	9.916619	10.083381
9.803970	9.887093	9.916877	10.083123
9.804123	9.886989	9.917134	10.082866
9.804276	9.886885	9.917391	10.082609
9.804428	9.886780	9.917648	10.082352
9.804581	9.886676	9.917906	10.082094
9.804734	9.886571	9.918163	10.081837
9.804886	9.886466	9.918420	10.081580
9.805039	9.886362	9.918677	10.081323
9.805191	9.886257	9.918934	10.081066
9.805343	9.886152	9.919191	10.080809
9.805495	9.886047	9.919448	10.080552
9.805647	9.885942	9.919705	10.080295
9.805799	9.885837	9.919962	10.080038
9.805951	9.885732	9.920219	10.079781
9.806103	9.885627	9.920476	10.079524
9.806254	9.885522	9.920733	10.079267
9.806406	9.885416	9.920990	10.079010
9.806557	9.885311	9.921247	10.078753
9.806709	9.885205	9.921503	10.078497
9.806860	9.885100	9.921760	10.078240
9.807011	9.884994	9.922017	10.077983
9.807163	9.884889	9.922274	10.077726
9.807314	9.884783	9.922530	10.077470
9.807465	9.884677	9.922787	10.077213
9.807615	9.884572	9.923044	10.076956
9.807766	9.884466	9.923300	10.076700
9.807917	9.884360	9.923557	10.076443
9.808067	9.884254	9.923814	10.076186
Co-fin.	S I N.	Co-tan.	TAN.

50.

Canon Triangulorum Logarithmicus.

40.					41.				
M	SIN.	Co-fin.	TAN.	Co-tan.	SIN.	Co-fin.	TAN.	Co-tan.	M
0	9.808067	9.884254	9.923814	10.076186	9.816943	9.877780	9.939163	10.060837	60
1	9.808218	9.884148	9.924070	10.075930	9.817088	9.877670	9.939418	10.060582	59
2	9.808368	9.884042	9.924327	10.075673	9.817233	9.877560	9.939673	10.060327	58
3	9.808519	9.883936	9.924583	10.075417	9.817379	9.877450	9.939928	10.060072	57
4	9.808669	9.883829	9.924840	10.075160	9.817524	9.877340	9.940183	10.059817	56
5	9.808819	9.883723	9.925096	10.074904	9.817668	9.877230	9.940439	10.059561	55
6	9.808969	9.883617	9.925352	10.074648	9.817813	9.877120	9.940694	10.059306	54
7	9.809119	9.883510	9.925609	10.074391	9.817958	9.877010	9.940949	10.059051	53
8	9.809269	9.883404	9.925865	10.074135	9.818103	9.876899	9.941204	10.058796	52
9	9.809419	9.883297	9.926122	10.073878	9.818247	9.876789	9.941459	10.058541	51
10	9.809569	9.883191	9.926378	10.073622	9.818392	9.876678	9.941713	10.058287	50
11	9.809718	9.883084	9.926634	10.073366	9.818536	9.876568	9.941968	10.058032	49
12	9.809868	9.882977	9.926890	10.073110	9.818681	9.876457	9.942223	10.057777	48
13	9.810017	9.882871	9.927147	10.072853	9.818825	9.876347	9.942478	10.057522	47
14	9.810167	9.882764	9.927403	10.072597	9.818969	9.876236	9.942733	10.057267	46
15	9.810316	9.882657	9.927659	10.072341	9.819113	9.876125	9.942988	10.057012	45
16	9.810465	9.882550	9.927915	10.072085	9.819257	9.876014	9.943243	10.056757	44
17	9.810614	9.882443	9.928171	10.071829	9.819401	9.875904	9.943498	10.056502	43
18	9.810763	9.882336	9.928427	10.071573	9.819545	9.875793	9.943752	10.056248	42
19	9.810912	9.882229	9.928684	10.071316	9.819689	9.875682	9.944007	10.055993	41
20	9.811061	9.882121	9.928940	10.071060	9.819832	9.875571	9.944262	10.055738	40
21	9.811210	9.882014	9.929196	10.070804	9.819976	9.875459	9.944517	10.055483	39
22	9.811358	9.881907	9.929452	10.070548	9.820120	9.875348	9.944771	10.055229	38
23	9.811507	9.881799	9.929708	10.070292	9.820263	9.875237	9.945026	10.054974	37
24	9.811655	9.881692	9.929964	10.070036	9.820406	9.875126	9.945281	10.054719	36
25	9.811804	9.881584	9.930220	10.069781	9.820550	9.875014	9.945535	10.054465	35
26	9.811952	9.881477	9.930475	10.069525	9.820693	9.874903	9.945790	10.054210	34
27	9.812100	9.881369	9.930731	10.069269	9.820836	9.874791	9.946045	10.053955	33
28	9.812248	9.881261	9.930987	10.069013	9.820979	9.874680	9.946299	10.053701	32
29	9.812396	9.881153	9.931243	10.068757	9.821122	9.874568	9.946554	10.053446	31
30	9.812544	9.881046	9.931499	10.068501	9.821265	9.874456	9.946808	10.053192	30
	Co-fin.	SIN.	Co-tan.	TAN.	Co-fin.	SIN.	Co-tan.	TAN.	M

49.

48.

Canon Triangulorum Logarithmicus.

40.					41.				
M	S I N.	Co-fin.	T A N.	Co-tan.	S I N.	Co-fin.	T A N.	Co-tan.	
30	9.812144	9.881046	9.931499	10.068501	9.812165	9.874456	9.946808	10.053192	30
31	9.812692	9.880338	9.931755	10.068245	9.812407	9.874344	9.947053	10.052937	29
32	9.812840	9.880330	9.932010	10.067990	9.812550	9.874232	9.947318	10.052682	28
33	9.812988	9.880722	9.932266	10.067734	9.812693	9.874121	9.947572	10.052428	27
34	9.813135	9.880613	9.932522	10.067478	9.812835	9.874009	9.947827	10.052173	26
35	9.813283	9.880505	9.932778	10.067222	9.812977	9.873896	9.948081	10.051919	25
36	9.813430	9.880397	9.933033	10.066967	9.812210	9.873784	9.948335	10.051665	24
37	9.813578	9.880289	9.933289	10.066711	9.812262	9.873672	9.948590	10.051410	23
38	9.813725	9.880180	9.933545	10.066455	9.812404	9.873560	9.948844	10.051156	22
39	9.813872	9.880072	9.933800	10.066200	9.812546	9.873448	9.949099	10.050901	21
40	9.814019	9.879963	9.934056	10.065944	9.812688	9.873335	9.949353	10.050647	20
41	9.814166	9.879855	9.934311	10.065689	9.812830	9.873223	9.949608	10.050392	19
42	9.814313	9.879746	9.934567	10.065433	9.812972	9.873110	9.949862	10.050138	18
43	9.814460	9.879637	9.934822	10.065178	9.813114	9.872998	9.950116	10.049884	17
44	9.814607	9.879529	9.935078	10.064922	9.813255	9.872885	9.950371	10.049629	16
45	9.814753	9.879420	9.935333	10.064667	9.813397	9.872772	9.950625	10.049375	15
46	9.814900	9.879311	9.935589	10.064411	9.813539	9.872659	9.950879	10.049121	14
47	9.815046	9.879202	9.935844	10.064156	9.813680	9.872547	9.951133	10.048867	13
48	9.815193	9.879093	9.936100	10.063900	9.813821	9.872434	9.951388	10.048612	12
49	9.815339	9.878984	9.936355	10.063645	9.813963	9.872321	9.951642	10.048358	11
50	9.815485	9.878875	9.936611	10.063389	9.814104	9.872208	9.951896	10.048104	10
51	9.815632	9.878766	9.936866	10.063134	9.814245	9.872095	9.952150	10.047850	9
52	9.815778	9.878656	9.937121	10.062879	9.814386	9.871981	9.952405	10.047595	8
53	9.815924	9.878547	9.937377	10.062623	9.814527	9.871868	9.952659	10.047341	7
54	9.816069	9.878438	9.937632	10.062368	9.814668	9.871755	9.952913	10.047087	6
55	9.816215	9.878328	9.937887	10.062113	9.814808	9.871641	9.953167	10.046833	5
56	9.816361	9.878219	9.938142	10.061858	9.814949	9.871528	9.953421	10.046579	4
57	9.816507	9.878109	9.938398	10.061602	9.815090	9.871414	9.953675	10.046325	3
58	9.816652	9.877999	9.938653	10.061347	9.815230	9.871301	9.953929	10.046071	2
59	9.816798	9.877890	9.938908	10.061092	9.815371	9.871187	9.954183	10.045817	1
60	9.816943	9.877780	9.939163	10.060837	9.815511	9.871073	9.954437	10.045563	0
Co-fin.		S I N.	Co-tan.	T A N.	Co-fin.		S I N.	Co-tan.	T A N. M
49.					48.				

Canon Triangulorum Logarithmicus.

42.

M	SIN.	Co-fin.	TAN.	Co-tan.
0	9.825511	9.871073	9.954437	10.045563
1	9.825651	9.870960	9.954691	10.045309
2	9.825791	9.870846	9.954946	10.045054
3	9.825931	9.870732	9.955200	10.044800
4	9.826071	9.870618	9.955454	10.044546
5	9.826211	9.870504	9.955708	10.044292
6	9.826351	9.870390	9.955961	10.044039
7	9.826491	9.870276	9.956215	10.043785
8	9.826631	9.870161	9.956469	10.043531
9	9.826770	9.870047	9.956723	10.043277
10	9.826910	9.869933	9.956977	10.043023
11	9.827049	9.869818	9.957231	10.042769
12	9.827189	9.869704	9.957485	10.042515
13	9.827328	9.869589	9.957739	10.042261
14	9.827467	9.869474	9.957993	10.042007
15	9.827606	9.869360	9.958247	10.041753
16	9.827745	9.869245	9.958500	10.041500
17	9.827884	9.869130	9.958754	10.041246
18	9.828023	9.869015	9.959008	10.040992
19	9.828162	9.868900	9.959262	10.040738
20	9.828301	9.868785	9.959516	10.040484
21	9.828439	9.868670	9.959769	10.040231
22	9.828578	9.868555	9.960023	10.039977
23	9.828716	9.868440	9.960277	10.039723
24	9.828855	9.868324	9.960530	10.039470
25	9.828993	9.868209	9.960784	10.039216
26	9.829131	9.868093	9.961038	10.038962
27	9.829269	9.867978	9.961292	10.038708
28	9.829407	9.867862	9.961545	10.038455
29	9.829545	9.867747	9.961799	10.038201
30	9.829683	9.867631	9.962052	10.037948
	Co-fin.	SIN.	Co-tan.	TAN.

47.

43.

SIN.	Co-fin.	TAN.	Co-tan.	
9.833783	9.864127	9.969656	10.030344	60
9.833919	9.864010	9.969909	10.030091	59
9.834054	9.863892	9.970162	10.029838	58
9.834189	9.863774	9.970416	10.029584	57
9.834325	9.863656	9.970669	10.029331	56
9.834460	9.863538	9.970922	10.029078	55
9.834595	9.863419	9.971175	10.028825	54
9.834730	9.863301	9.971429	10.028571	53
9.834865	9.863183	9.971682	10.028318	52
9.834999	9.863064	9.971935	10.028065	51
9.835134	9.862946	9.972188	10.027812	50
9.835269	9.862827	9.972441	10.027559	49
9.835403	9.862709	9.972695	10.027305	48
9.835538	9.862590	9.972948	10.027052	47
9.835672	9.862471	9.973201	10.026799	46
9.835807	9.862353	9.973454	10.026546	45
9.835941	9.862234	9.973707	10.026293	44
9.836075	9.862115	9.973960	10.026040	43
9.836209	9.861996	9.974213	10.025787	42
9.836343	9.861877	9.974466	10.025534	41
9.836477	9.861758	9.974720	10.025280	40
9.836611	9.861638	9.974973	10.025027	39
9.836745	9.861519	9.975226	10.024774	38
9.836878	9.861400	9.975479	10.024521	37
9.837012	9.861280	9.975732	10.024268	36
9.837146	9.861161	9.975985	10.024015	35
9.837279	9.861041	9.976238	10.023762	34
9.837412	9.860922	9.976491	10.023509	33
9.837546	9.860802	9.976744	10.023256	32
9.837679	9.860682	9.976997	10.023003	31
9.837812	9.860562	9.977250	10.022750	30
Co-fin.	SIN.	Co-tan.	TAN.	M

46.

Canon Triangulorum Logarithmicus

42

M	SIN.	Co-fin.	TAN.	Co-tan.
30	9.829683	9.867631	9.962052	10.037948
31	9.829821	9.867515	9.962306	10.037694
32	9.829959	9.867399	9.962560	10.037440
33	9.830097	9.867283	9.962813	10.037187
34	9.830234	9.867167	9.963067	10.036933
35	9.830372	9.867051	9.963320	10.036680
36	9.830509	9.866935	9.963574	10.036426
37	9.830646	9.866819	9.963828	10.036172
38	9.830784	9.866703	9.964081	10.035919
39	9.830921	9.866586	9.964335	10.035665
40	9.831058	9.866470	9.964588	10.035412
41	9.831195	9.866353	9.964842	10.035158
42	9.831332	9.866237	9.965095	10.034905
43	9.831469	9.866120	9.965349	10.034651
44	9.831606	9.866004	9.965602	10.034398
45	9.831742	9.865887	9.965855	10.034145
46	9.831879	9.865770	9.966109	10.033891
47	9.832015	9.865653	9.966362	10.033638
48	9.832152	9.865536	9.966616	10.033384
49	9.832288	9.865419	9.966869	10.033131
50	9.832425	9.865302	9.967123	10.032877
51	9.832561	9.865185	9.967376	10.032624
52	9.832697	9.865068	9.967629	10.032371
53	9.832833	9.864950	9.967883	10.032117
54	9.832969	9.864833	9.968136	10.031864
55	9.833105	9.864716	9.968389	10.031611
56	9.833241	9.864598	9.968643	10.031357
57	9.833377	9.864481	9.968896	10.031104
58	9.833512	9.864363	9.969149	10.030851
59	9.833648	9.864245	9.969403	10.030597
60	9.833783	9.864127	9.969656	10.030344
	Co-fin.	SIN.	Co-tan.	TAN.

47

43

SIN.	Co-fin.	TAN.	Co-tan.	M
9.837812	9.860562	9.977250	10.022750	30
9.837945	9.860444	9.977503	10.022497	29
9.838078	9.860322	9.977756	10.022244	28
9.838211	9.860202	9.978009	10.021991	27
9.838344	9.860082	9.978262	10.021738	26
9.838477	9.859962	9.978515	10.021485	25
9.838610	9.859842	9.978768	10.021232	24
9.838742	9.859721	9.979021	10.020979	23
9.838875	9.859601	9.979274	10.020726	22
9.839007	9.859480	9.979527	10.020473	21
9.839140	9.859360	9.979780	10.020220	20
9.839272	9.859239	9.980033	10.019967	19
9.839404	9.859119	9.980286	10.019714	18
9.839536	9.858998	9.980538	10.019462	17
9.839668	9.858877	9.980791	10.019209	16
9.839800	9.858756	9.981044	10.018956	15
9.839932	9.858635	9.981297	10.018703	14
9.840064	9.858514	9.981550	10.018450	13
9.840196	9.858393	9.981803	10.018197	12
9.840328	9.858272	9.982056	10.017944	11
9.840459	9.858151	9.982309	10.017691	10
9.840591	9.858029	9.982562	10.017438	9
9.840722	9.857908	9.982814	10.017186	8
9.840854	9.857786	9.983067	10.016933	7
9.840985	9.857665	9.983320	10.016680	6
9.841116	9.857543	9.983573	10.016427	5
9.841247	9.857422	9.983826	10.016174	4
9.841378	9.857300	9.984079	10.015921	3
9.841509	9.857178	9.984332	10.015668	2
9.841640	9.857056	9.984584	10.015416	1
9.841771	9.856934	9.984837	10.015163	0
Co-fin.	SIN.	Co-tan.	TAN.	M

46

Canon Triangulorum Logarithmicus

S. I. N.		Co-fin.		T. A. N.		Co-tan.	
1	9.841771	9.856934	9.984837	10.015163	60		
2	9.841902	9.856812	9.985090	10.014910	59		
3	9.842033	9.856690	9.985343	10.014657	58		
4	9.842163	9.856568	9.985596	10.014404	57		
5	9.842294	9.856446	9.985848	10.014152	56		
6	9.842424	9.856323	9.986101	10.013899	55		
7	9.842555	9.856201	9.986354	10.013646	54		
8	9.842685	9.856078	9.986607	10.013393	53		
9	9.842815	9.855956	9.986860	10.013140	52		
10	9.842946	9.855833	9.987112	10.012888	51		
11	9.843076	9.855711	9.987365	10.012635	50		
12	9.843206	9.855588	9.987618	10.012382	49		
13	9.843336	9.855465	9.987871	10.012129	48		
14	9.843466	9.855342	9.988123	10.011877	47		
15	9.843595	9.855219	9.988376	10.011624	46		
16	9.843725	9.855096	9.988629	10.011371	45		
17	9.843855	9.854973	9.988882	10.011118	44		
18	9.843984	9.854850	9.989134	10.010866	43		
19	9.844114	9.854727	9.989387	10.010613	42		
20	9.844243	9.854603	9.989640	10.010360	41		
21	9.844372	9.854480	9.989893	10.010107	40		
22	9.844502	9.854356	9.990145	10.009855	39		
23	9.844631	9.854233	9.990398	10.009602	38		
24	9.844760	9.854109	9.990651	10.009349	37		
25	9.844889	9.853986	9.990903	10.009096	36		
26	9.845018	9.853862	9.991156	10.008844	35		
27	9.845147	9.853738	9.991409	10.008591	34		
28	9.845276	9.853614	9.991662	10.008338	33		
29	9.845405	9.853490	9.991914	10.008086	32		
30	9.845533	9.853366	9.992167	10.007833	31		
31	9.845662	9.853242	9.992420	10.007580	30		
Co-fin.		S. I. N.		Co-tan.		T. A. N.	

Canon Triangularum Logarithmicarum

44.

N	S I N.	Co-fin.	T A	Co-tan.	
30	9.845652	9.853242	9.992709	10.007580	30
31	9.845790	9.853118	9.992872	10.007328	29
32	9.845919	9.852994	9.993035	10.007075	28
33	9.846047	9.852869	9.993178	10.006822	27
34	9.846175	9.852745	9.993331	10.006569	26
35	9.846304	9.852620	9.993483	10.006317	25
36	9.846432	9.852496	9.993636	10.006064	24
37	9.846560	9.852371	9.993789	10.005811	23
38	9.846688	9.852247	9.993941	10.005559	22
39	9.846816	9.852122	9.994094	10.005306	21
40	9.846944	9.851997	9.994247	10.005053	20
41	9.847071	9.851873	9.994400	10.004801	19
42	9.847199	9.851747	9.994552	10.004548	18
43	9.847327	9.851622	9.994705	10.004295	17
44	9.847454	9.851497	9.994857	10.004043	16
45	9.847582	9.851372	9.995010	10.003790	15
46	9.847709	9.851246	9.995163	10.003537	14
47	9.847836	9.851121	9.995315	10.003285	13
48	9.847964	9.850996	9.995468	10.003032	12
49	9.848091	9.850870	9.995621	10.002779	11
50	9.848218	9.850745	9.995773	10.002527	10
51	9.848345	9.850619	9.995926	10.002274	9
52	9.848472	9.850493	9.996079	10.002021	8
53	9.848599	9.850368	9.996231	10.001769	7
54	9.848726	9.850242	9.996384	10.001516	6
55	9.848852	9.850116	9.996537	10.001263	5
56	9.848979	9.849990	9.996689	10.001011	4
57	9.849106	9.849864	9.996842	10.000758	3
58	9.849232	9.849738	9.996995	10.000505	2
59	9.849359	9.849611	9.997147	10.000253	1
60	9.849485	9.849485	10.000000	10.000000	0
	Co-fin.	S I N.	Co-tan.	T A N.	M

45.

Tabula Logarithmorum Logisticorum.

I	0	1	2	3	4	5	6	7	8	9
II	0	60	120	180	240	300	360	420	480	540
0	—	17782	14771	12010	11761	10792	10000	9331	8751	8239
1	35563	17710	14735	12986	11743	10777	9988	9320	8742	8231
2	32553	17639	14699	12962	11725	10763	9976	9310	8733	8223
3	30792	17570	14664	12939	11707	10749	9964	9300	8724	8215
4	29542	17501	14629	12915	11689	10734	9952	9289	8715	8207
5	28573	17434	14594	12891	11671	10720	9940	9279	8706	8199
6	27782	17368	14559	12868	11654	10706	9928	9269	8697	8191
7	27112	17302	14525	12845	11636	10692	9916	9259	8688	8183
8	26532	17238	14491	12821	11619	10678	9905	9249	8679	8175
9	26021	17175	14457	12798	11601	10663	9893	9238	8670	8167
10	25563	17112	14424	12775	11584	10649	9881	9228	8661	8159
11	25149	17050	14390	12753	11566	10635	9869	9218	8652	8152
12	24771	16990	14357	12730	11549	10621	9858	9208	8643	8144
13	24424	16930	14325	12707	11532	10608	9846	9198	8635	8136
14	24102	16871	14292	12685	11515	10594	9834	9188	8626	8128
15	23802	16812	14260	12663	11498	10580	9823	9178	8617	8120
16	23522	16755	14228	12640	11481	10566	9811	9168	8608	8112
17	23259	16698	14196	12618	11464	10552	9800	9158	8599	8104
18	23010	16642	14165	12596	11447	10539	9788	9148	8591	8097
19	22775	16587	14133	12574	11430	10525	9777	9138	8582	8089
20	22553	16532	14102	12553	11413	10512	9765	9128	8573	8081
21	22341	16478	14071	12531	11397	10498	9754	9119	8565	8073
22	22139	16425	14040	12510	11380	10484	9742	9109	8556	8066
23	21946	16372	14010	12488	11363	10471	9731	9099	8547	8058
24	21761	16320	13979	12467	11347	10458	9720	9089	8539	8050
25	21584	16269	13949	12445	11331	10444	9708	9079	8530	8043
26	21413	16218	13919	12424	11314	10431	9697	9070	8522	8035
27	21249	16168	13890	12403	11298	10418	9686	9060	8513	8027
28	21091	16118	13860	12382	11282	10404	9675	9050	8504	8020
29	20939	16069	13831	12362	11266	10391	9664	9041	8496	8012
30	20792	16021	13802	12341	11249	10378	9652	9031	8487	8004

Tabula Logarithmorum Logisticorum.

<u>1</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
<u>11</u>	<u>0</u>	<u>60</u>	<u>120</u>	<u>180</u>	<u>240</u>	<u>300</u>	<u>360</u>	<u>420</u>	<u>480</u>	<u>540</u>
30	20792	16021	13802	12341	11249	10378	9652	9031	8487	8004
31	20649	15973	13773	12320	11233	10365	9641	9021	8479	7997
32	20512	15925	13745	12300	11217	10352	9630	9012	8470	7989
33	20378	15878	13716	12279	11201	10339	9619	9002	8462	7981
34	20248	15832	13688	12259	11186	10326	9608	8992	8453	7974
35	20122	15786	13660	12239	11170	10313	9597	8983	8445	7966
36	20000	15740	13632	12218	11154	10300	9586	8973	8437	7959
37	19881	15695	13604	12198	11138	10287	9575	8964	8428	7951
38	19765	15651	13576	12178	11123	10274	9564	8954	8420	7944
39	19652	15607	13549	12159	11107	10261	9553	8945	8411	7936
40	19542	15563	13522	12139	11091	10248	9542	8935	8403	7929
41	19435	15520	13495	12119	11076	10235	9532	8926	8395	7921
42	19331	15477	13468	12099	11061	10223	9521	8917	8386	7914
43	19228	15435	13441	12080	11045	10210	9510	8907	8378	7906
44	19128	15393	13415	12061	11030	10197	9499	8898	8370	7899
45	19031	15351	13388	12041	11015	10185	9488	8888	8361	7891
46	18935	15310	13362	12022	10999	10172	9478	8879	8353	7884
47	18842	15269	13336	12003	10984	10160	9467	8870	8345	7877
48	18751	15229	13310	11984	10969	10147	9456	8861	8337	7869
49	18661	15189	13284	11965	10954	10135	9446	8851	8328	7862
50	18573	15149	13259	11946	10939	10122	9435	8842	8320	7855
51	18487	15110	13233	11927	10924	10110	9425	8833	8312	7847
52	18403	15071	13208	11908	10909	10098	9414	8824	8304	7840
53	18320	15032	13183	11889	10894	10085	9404	8814	8296	7832
54	18239	14994	13158	11871	10880	10073	9393	8805	8288	7825
55	18159	14956	13133	11852	10865	10061	9383	8796	8279	7818
56	18081	14918	13108	11834	10850	10049	9372	8787	8271	7811
57	18004	14881	13083	11816	10835	10036	9362	8778	8263	7803
58	17929	14844	13059	11797	10821	10024	9351	8769	8255	7796
59	17855	14808	13034	11779	10806	10012	9341	8760	8247	7789
60	17782	14771	13010	11761	10792	10000	9331	8751	8239	7782

Tabula Logarithmorum Logisticorum.

I	10	11	12	13	14	15	16	17	18	19	20	21
II	600	660	720	780	840	900	960	1020	1080	1140	1200	1260
0	7782	7368	6990	6642	6320	6021	5740	5477	5229	4994	4771	4559
1	7774	7361	6984	6637	6315	6016	5736	5473	5225	4990	4768	4556
2	7767	7354	6978	6631	6310	6011	5731	5469	5221	4986	4764	4552
3	7760	7348	6972	6625	6305	6006	5727	5464	5217	4983	4760	4549
4	7753	7341	6966	6620	6300	6001	5722	5460	5213	4979	4757	4546
5	7745	7335	6960	6614	6294	5997	5718	5456	5209	4975	4753	4542
6	7738	7328	6954	6609	6289	5992	5713	5452	5205	4971	4750	4539
7	7731	7322	6948	6603	6284	5987	5709	5447	5201	4967	4746	4535
8	7724	7315	6942	6598	6279	5982	5704	5443	5197	4964	4742	4532
9	7717	7309	6936	6592	6274	5977	5700	5439	5193	4960	4739	4528
10	7710	7302	6930	6587	6269	5973	5695	5435	5189	4956	4735	4525
11	7703	7296	6924	6581	6264	5968	5691	5430	5185	4952	4732	4522
12	7696	7289	6918	6576	6259	5963	5686	5426	5181	4949	4728	4518
13	7688	7283	6912	6570	6254	5958	5682	5422	5177	4945	4724	4515
14	7681	7276	6906	6565	6248	5954	5677	5418	5173	4941	4721	4511
15	7674	7270	6900	6559	6243	5949	5673	5414	5169	4937	4717	4508
16	7667	7264	6894	6554	6238	5944	5669	5409	5165	4933	4714	4505
17	7660	7257	6888	6548	6233	5939	5664	5405	5161	4930	4710	4501
18	7653	7251	6882	6543	6228	5935	5660	5401	5157	4926	4707	4498
19	7646	7244	6877	6538	6223	5930	5655	5397	5153	4922	4703	4494
20	7639	7238	6871	6532	6218	5925	5651	5393	5149	4918	4699	4491
21	7632	7232	6865	6527	6213	5920	5646	5389	5145	4915	4696	4488
22	7625	7225	6859	6521	6208	5916	5642	5384	5141	4911	4692	4484
23	7618	7219	6853	6516	6203	5911	5637	5380	5137	4907	4689	4481
24	7611	7212	6847	6510	6198	5906	5633	5376	5133	4903	4685	4477
25	7604	7206	6841	6505	6193	5902	5629	5372	5129	4900	4682	4474
26	7597	7200	6836	6500	6188	5897	5624	5368	5125	4896	4678	4471
27	7590	7193	6830	6494	6182	5892	5620	5364	5122	4892	4675	4467
28	7583	7187	6824	6489	6178	5888	5615	5359	5118	4889	4671	4464
29	7577	7181	6818	6484	6173	5883	5611	5355	5114	4885	4668	4460
30	7570	7175	6812	6478	6168	5878	5607	5351	5110	4881	4664	4457

Tabula Logarithmorum Logisticorum.

	10	11	12	13	14	15	16	17	18	19	20	21
"	600	660	720	780	840	900	960	1020	1080	1140	1200	1260
30	7570	7175	6812	6478	6168	5878	5607	5351	5110	4881	4664	4457
31	7563	7168	6807	6473	6163	5874	5602	5347	5106	4877	4660	4454
32	7556	7162	6801	6467	6158	5869	5598	5343	5102	4874	4657	4450
33	7549	7156	6795	6462	6153	5864	5594	5339	5098	4870	4653	4447
34	7542	7149	6789	6457	6148	5860	5589	5335	5094	4866	4650	4444
35	7535	7143	6784	6451	6143	5855	5585	5331	5090	4863	4646	4440
36	7528	7137	6778	6446	6138	5850	5580	5326	5086	4859	4643	4437
37	7522	7131	6772	6441	6133	5846	5576	5322	5082	4855	4639	4434
38	7515	7124	6766	6435	6128	5841	5572	5318	5079	4852	4636	4430
39	7508	7118	6761	6430	6123	5836	5567	5314	5075	4848	4632	4427
40	7501	7112	6755	6425	6118	5832	5563	5310	5071	4844	4629	4424
41	7494	7106	6749	6420	6113	5827	5559	5306	5067	4841	4625	4420
42	7488	7100	6743	6414	6108	5823	5554	5302	5063	4837	4622	4417
43	7481	7093	6738	6409	6103	5818	5550	5298	5059	4833	4618	4414
44	7474	7087	6732	6404	6099	5813	5546	5294	5055	4830	4615	4410
45	7467	7081	6726	6398	6094	5809	5541	5290	5051	4826	4611	4407
46	7461	7075	6721	6393	6089	5804	5537	5285	5048	4822	4608	4404
47	7454	7069	6715	6388	6084	5800	5533	5281	5044	4819	4604	4400
48	7447	7063	6709	6383	6079	5795	5528	5277	5040	4815	4601	4397
49	7441	7057	6704	6377	6074	5790	5524	5273	5036	4811	4597	4394
50	7434	7050	6698	6372	6069	5786	5520	5269	5032	4808	4594	4390
51	7427	7044	6692	6367	6064	5781	5516	5265	5028	4804	4590	4387
52	7421	7038	6687	6362	6059	5777	5511	5261	5025	4800	4587	4384
53	7414	7032	6681	6357	6055	5772	5507	5257	5021	4797	4584	4380
54	7407	7026	6676	6351	6050	5768	5503	5253	5017	4793	4580	4377
55	7401	7020	6670	6346	6045	5763	5498	5249	5013	4789	4577	4374
56	7394	7014	6664	6341	6040	5758	5494	5245	5009	4786	4573	4370
57	7387	7008	6659	6336	6035	5754	5490	5241	5005	4782	4570	4367
58	7381	7002	6653	6331	6030	5749	5486	5237	5002	4778	4566	4364
59	7374	6996	6648	6325	6025	5745	5481	5233	4998	4775	4563	4361
60	7368	6990	6642	6320	6021	5740	5477	5229	4994	4771	4559	4357

Tabula Logarithmorum Logisticorum.

I	22	23	24	25	26	27	28	29	30	31	32	33
II	1220	1280	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980
0	4357	4164	3979	3802	3632	3468	3310	3158	3010	2868	2730	2596
I	4354	4161	3976	3799	3629	3465	3307	3155	3008	2866	2728	2594
2	4351	4158	3973	3796	3626	3463	3305	3153	3005	2863	2725	2592
3	4347	4155	3970	3793	3623	3460	3302	3150	3003	2861	2723	2590
4	4344	4152	3967	3791	3621	3457	3300	3148	3001	2859	2721	2588
5	4341	4149	3964	3788	3618	3454	3297	3145	2998	2856	2719	2585
6	4338	4145	3961	3785	3615	3452	3294	3143	2996	2854	2716	2583
7	4334	4142	3958	3782	3612	3449	3292	3140	2993	2852	2714	2581
8	4331	4139	3955	3779	3610	3446	3289	3138	2991	2849	2712	2579
9	4328	4136	3952	3776	3607	3444	3287	3135	2989	2847	2710	2577
10	4325	4133	3949	3773	3604	3441	3284	3133	2986	2845	2707	2574
11	4321	4130	3946	3770	3601	3438	3282	3130	2984	2842	2705	2572
12	4318	4127	3943	3768	3598	3436	3279	3128	2981	2840	2703	2570
13	4315	4124	3940	3765	3596	3433	3276	3125	2979	2838	2701	2568
14	4311	4120	3937	3762	3593	3431	3274	3123	2977	2835	2698	2566
15	4308	4117	3934	3759	3590	3428	3271	3120	2974	2833	2696	2564
16	4305	4114	3931	3756	3587	3425	3269	3118	2972	2831	2694	2561
17	4302	4111	3928	3753	3585	3423	3266	3115	2969	2828	2692	2559
18	4298	4108	3925	3750	3582	3420	3264	3113	2967	2826	2689	2557
19	4295	4105	3922	3747	3579	3417	3261	3110	2965	2824	2687	2555
20	4292	4102	3919	3745	3576	3415	3259	3108	2962	2821	2685	2553
21	4289	4099	3917	3742	3574	3412	3256	3105	2960	2819	2683	2551
22	4285	4096	3914	3739	3571	3409	3253	3103	2958	2817	2681	2548
23	4282	4092	3911	3736	3568	3407	3251	3101	2955	2815	2678	2546
24	4279	4089	3908	3733	3565	3404	3248	3098	2953	2812	2676	2544
25	4276	4086	3905	3730	3563	3401	3246	3096	2950	2810	2674	2542
26	4273	4083	3902	3727	3560	3399	3243	3093	2948	2808	2672	2540
27	4269	4080	3899	3725	3557	3396	3241	3091	2946	2805	2669	2538
28	4266	4077	3896	3722	3555	3393	3238	3088	2943	2803	2667	2535
29	4263	4074	3893	3719	3552	3391	3236	3086	2941	2801	2665	2533
30	4260	4071	3890	3616	3549	3388	3233	3083	2939	2798	2663	2531

Tabula Logarithmorum Logisticorum.

I	22	23	24	25	26	27	28	29	30	31	32	33
II	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860	1920	1980
30	4260	4071	3890	3716	3549	3388	3233	3083	2939	2798	2663	2531
31	4256	4068	3887	3713	3546	3386	3231	3081	2936	2796	2660	2529
32	4253	4065	3884	3710	3544	3383	3228	3078	2934	2794	2658	2527
33	4250	4062	3881	3708	3541	3380	3225	3076	2931	2792	2656	2525
34	4247	4059	3878	3705	3538	3378	3223	3073	2929	2789	2654	2522
35	4244	4055	3875	3702	3535	3375	3220	3071	2927	2787	2652	2520
36	4240	4052	3872	3699	3533	3372	3218	3069	2924	2785	2649	2518
37	4237	4049	3869	3696	3530	3370	3215	3066	2922	2782	2647	2516
38	4234	4046	3866	3693	3527	3367	3213	3064	2920	2780	2645	2514
39	4231	4043	3863	3691	3525	3365	3210	3061	2917	2778	2643	2512
40	4228	4040	3860	3688	3522	3362	3208	3059	2915	2775	2640	2510
41	4224	4037	3857	3685	3519	3359	3205	3056	2912	2773	2638	2507
42	4221	4034	3855	3682	3516	3357	3203	3054	2910	2771	2636	2505
43	4218	4031	3852	3679	3514	3354	3200	3052	2908	2769	2634	2503
44	4215	4028	3849	3677	3511	3351	3198	3049	2905	2766	2632	2501
45	4212	4025	3846	3674	3508	3349	3195	3047	2903	2764	2630	2499
46	4209	4022	3843	3671	3506	3346	3193	3044	2901	2762	2627	2497
47	4205	4019	3840	3668	3503	3344	3190	3042	2898	2760	2625	2494
48	4202	4016	3837	3665	3500	3341	3188	3039	2896	2757	2623	2492
49	4199	4013	3834	3663	3497	3338	3185	3037	2894	2755	2621	2490
50	4196	4010	3831	3660	3495	3336	3183	3034	2891	2753	2618	2488
51	4193	4007	3828	3657	3492	3333	3180	3032	2889	2750	2616	2486
52	4189	4004	3825	3654	3489	3331	3178	3030	2887	2748	2614	2484
53	4186	4001	3822	3651	3487	3328	3175	3027	2884	2746	2612	2482
54	4183	3998	3820	3649	3484	3325	3173	3025	2882	2744	2610	2480
55	4180	3995	3817	3646	3481	3323	3170	3022	2880	2741	2607	2477
56	4177	3991	3814	3643	3479	3320	3168	3020	2877	2739	2605	2475
57	4174	3988	3811	3640	3476	3318	3165	3018	2875	2737	2603	2473
58	4171	3985	3808	3637	3473	3315	3163	3015	2873	2735	2601	2471
59	4167	3982	3805	3635	3471	3313	3160	3013	2870	2732	2599	2469
60	4164	3979	3802	3632	3468	3310	3158	3010	2868	2730	2596	2467

Tabula Logarithmorum Logisticorum.

'	34	35	36	37	38	39	40	41	42	43	44	45
"	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700
0	2467	2341	2218	2099	1984	1871	1761	1654	1549	1447	1347	1249
1	2465	2339	2216	2098	1982	1869	1759	1652	1547	1445	1345	1248
2	2462	2337	2214	2096	1980	1867	1757	1650	1546	1443	1344	1246
3	2460	2335	2212	2094	1978	1865	1755	1648	1544	1442	1342	1245
4	2458	2333	2210	2092	1976	1863	1754	1647	1542	1440	1340	1243
5	2456	2331	2208	2090	1974	1862	1752	1645	1540	1438	1339	1241
6	2454	2328	2206	2088	1972	1860	1750	1643	1539	1437	1337	1240
7	2452	2326	2204	2086	1970	1858	1748	1641	1537	1435	1335	1238
8	2450	2324	2202	2084	1968	1856	1746	1640	1535	1433	1334	1237
9	2448	2322	2200	2082	1967	1854	1745	1638	1534	1432	1332	1235
10	2445	2320	2198	2080	1965	1852	1743	1636	1532	1430	1331	1233
11	2443	2318	2196	2078	1963	1850	1741	1634	1530	1428	1329	1232
12	2441	2316	2194	2076	1961	1849	1739	1633	1528	1427	1327	1230
13	2439	2314	2192	2074	1959	1847	1737	1631	1527	1425	1326	1229
14	2437	2312	2190	2072	1957	1845	1736	1629	1525	1423	1324	1227
15	2435	2310	2188	2070	1955	1843	1734	1627	1523	1422	1322	1225
16	2433	2308	2186	2068	1953	1841	1732	1626	1522	1420	1321	1224
17	2431	2306	2184	2066	1951	1839	1730	1624	1520	1418	1319	1222
18	2429	2304	2182	2064	1950	1838	1728	1622	1518	1417	1317	1221
19	2426	2302	2180	2062	1948	1836	1727	1620	1516	1415	1316	1219
20	2424	2300	2178	2061	1946	1834	1725	1619	1515	1413	1314	1217
21	2422	2298	2176	2059	1944	1832	1723	1617	1513	1412	1313	1216
22	2420	2296	2174	2057	1942	1830	1721	1615	1511	1410	1311	1214
23	2418	2294	2172	2055	1940	1828	1719	1613	1510	1408	1309	1213
24	2416	2291	2170	2053	1938	1827	1718	1612	1508	1407	1308	1211
25	2414	2289	2169	2051	1936	1825	1716	1610	1506	1405	1306	1209
26	2412	2287	2167	2049	1934	1823	1714	1608	1504	1403	1304	1208
27	2410	2285	2165	2047	1933	1821	1712	1606	1503	1402	1303	1206
28	2408	2283	2163	2045	1931	1819	1711	1605	1501	1400	1301	1205
29	2405	2281	2161	2043	1929	1817	1709	1603	1499	1398	1300	1203
30	2403	2279	2159	2041	1927	1816	1707	1601	1498	1397	1298	1201

Tabula Logarithmorum Logisticorum.

'	34	35	36	37	38	39	40	41	42	43	44	45
"	2040	2100	2160	2220	2280	2340	2400	2460	2520	2580	2640	2700
30	2403	2279	2159	2041	1927	1816	1707	1601	1498	1397	1298	1201
31	2401	2277	2157	2039	1925	1814	1705	1599	1496	1395	1296	1200
32	2399	2275	2155	2037	1923	1812	1703	1598	1494	1393	1295	1198
33	2397	2273	2153	2035	1921	1810	1702	1596	1493	1392	1293	1197
34	2395	2271	2151	2033	1919	1808	1700	1594	1491	1390	1291	1195
35	2393	2269	2149	2032	1918	1806	1698	1592	1489	1388	1290	1193
36	2391	2267	2147	2030	1916	1805	1696	1591	1487	1387	1288	1192
37	2389	2265	2145	2028	1914	1803	1694	1589	1486	1385	1287	1190
38	2387	2263	2143	2026	1912	1801	1693	1587	1484	1383	1285	1189
39	2384	2261	2141	2024	1910	1799	1691	1585	1482	1382	1283	1187
40	2382	2259	2139	2022	1908	1797	1689	1584	1481	1380	1282	1186
41	2380	2257	2137	2020	1906	1795	1687	1582	1479	1378	1280	1184
42	2378	2255	2135	2018	1904	1794	1686	1580	1477	1377	1278	1182
43	2376	2253	2133	2016	1903	1792	1684	1578	1476	1375	1277	1181
44	2374	2251	2131	2014	1901	1790	1682	1577	1474	1373	1275	1179
45	2372	2249	2129	2012	1899	1788	1680	1575	1472	1372	1274	1178
46	2370	2247	2127	2010	1897	1786	1678	1573	1470	1370	1272	1176
47	2368	2245	2125	2009	1895	1785	1677	1571	1469	1368	1270	1174
48	2366	2243	2123	2007	1893	1783	1675	1570	1467	1367	1269	1173
49	2364	2241	2121	2005	1891	1781	1673	1568	1465	1365	1267	1171
50	2362	2239	2119	2003	1889	1779	1671	1566	1464	1363	1266	1170
51	2359	2237	2117	2001	1888	1777	1670	1565	1462	1362	1264	1168
52	2357	2235	2115	1999	1886	1775	1668	1563	1460	1360	1262	1167
53	2355	2233	2113	1997	1884	1774	1666	1561	1459	1359	1261	1165
54	2353	2231	2111	1995	1882	1772	1664	1559	1457	1357	1259	1162
55	2351	2229	2109	1993	1880	1770	1663	1558	1455	1355	1257	1162
56	2349	2227	2107	1991	1878	1768	1661	1556	1454	1354	1256	1160
57	2347	2225	2105	1989	1876	1766	1659	1554	1452	1352	1254	1159
58	2345	2223	2103	1987	1875	1765	1657	1552	1450	1350	1253	1157
59	2343	2220	2101	1986	1873	1763	1655	1551	1449	1349	1251	1156
60	2341	2218	2099	1984	1871	1761	1654	1549	1447	1347	1249	1154

Tabula Logarithmorum Logisticorum.

I	46	47	48	49	50	51	52	53	54	55	56	57	58	59
II	2760	2820	2880	2940	3000	3060	3120	3180	3240	3300	3360	3420	3480	3540
0	1154	1061	969	880	792	706	621	539	458	378	300	223	147	73
1	1152	1059	968	878	790	704	620	537	456	377	298	221	146	72
2	1151	1057	966	877	789	703	619	536	455	375	297	220	145	71
3	1149	1056	965	875	787	702	617	535	454	374	296	219	143	69
4	1148	1054	963	874	786	700	616	533	452	373	294	218	142	68
5	1146	1053	962	872	785	699	615	532	451	371	293	216	141	67
6	1145	1051	960	871	783	697	613	531	450	370	292	215	140	66
7	1143	1050	959	869	782	696	612	529	448	369	291	214	139	64
8	1141	1048	957	868	780	694	610	528	447	367	289	213	137	63
9	1140	1047	956	866	779	693	609	526	446	366	288	211	136	62
10	1138	1045	954	865	777	692	608	525	444	365	287	210	135	61
11	1137	1044	953	863	776	690	606	524	443	363	285	209	134	60
12	1135	1042	951	862	774	689	605	522	442	362	284	208	132	58
13	1134	1041	950	860	773	687	603	521	440	361	283	206	131	57
14	1132	1039	948	859	772	686	602	520	439	359	282	205	130	56
15	1130	1037	947	857	770	685	601	518	438	358	280	204	129	55
16	1129	1036	945	856	769	683	599	517	436	357	279	202	127	53
17	1127	1034	944	855	767	682	598	516	435	356	278	201	126	52
18	1126	1033	942	853	766	680	596	514	434	354	276	200	125	51
19	1124	1031	941	852	764	679	595	513	432	353	275	199	124	50
20	1123	1030	939	850	763	678	594	512	431	352	274	197	122	49
21	1121	1028	938	849	762	676	592	510	430	350	273	196	121	47
22	1119	1027	936	847	760	675	591	509	428	349	271	195	120	46
23	1118	1025	935	846	759	673	590	507	427	348	270	194	119	45
24	1116	1024	933	844	757	672	588	506	426	346	269	192	117	44
25	1115	1022	932	843	756	670	587	505	424	345	267	191	116	42
26	1113	1021	930	841	754	669	585	503	423	344	266	190	115	41
27	1112	1019	929	840	753	668	584	502	422	342	265	189	114	40
28	1110	1018	927	838	751	666	583	501	420	341	264	187	112	39
29	1109	1016	926	837	750	665	581	499	419	340	262	186	111	38
30	1107	1015	924	835	749	663	580	498	418	339	261	185	110	36

Tabula Logarithmorum Logisticorum.

	46	47	48	49	50	51	52	53	54	55	56	57	58	59
11	2760	2820	2880	2940	3000	3050	3120	3180	3240	3300	3360	3420	3480	3540
30	1107	1015	924	835	749	663	580	498	418	339	261	185	110	36
31	1105	1013	923	834	747	662	579	497	416	337	260	184	109	35
32	1104	1012	921	833	746	661	577	495	415	336	258	182	107	34
33	1102	1010	920	831	744	659	576	494	414	335	257	181	106	33
34	1101	1008	918	830	743	658	574	493	412	333	256	180	105	31
35	1099	1007	917	828	741	656	573	491	411	332	255	179	104	30
36	1098	1005	915	827	740	655	572	490	410	331	253	177	103	29
37	1096	1004	914	825	739	654	570	489	408	329	252	176	101	28
38	1095	1002	912	824	737	652	569	487	407	328	251	175	100	27
39	1093	1001	911	822	736	651	568	486	406	327	250	174	99	25
40	1091	999	909	821	734	649	566	484	404	326	248	172	98	24
41	1090	998	908	819	733	648	565	483	403	324	247	171	96	23
42	1088	996	906	818	731	647	563	482	402	323	246	170	95	22
43	1087	995	905	816	730	645	562	480	400	322	244	169	94	21
44	1085	993	903	815	729	644	561	479	399	320	243	167	93	19
45	1084	992	902	814	727	642	559	478	398	319	242	166	91	18
46	1082	990	900	812	726	641	558	476	396	318	241	165	90	17
47	1081	989	899	811	724	640	557	475	395	316	239	163	89	16
48	1079	987	897	809	723	638	555	474	394	315	238	162	88	15
49	1078	986	896	808	721	637	554	472	392	314	237	161	87	13
50	1076	984	894	806	720	635	552	471	391	313	235	160	85	12
51	1074	983	893	805	719	634	551	470	390	311	234	158	84	11
52	1073	981	891	803	717	633	550	468	388	310	233	157	83	10
53	1071	980	890	802	716	631	548	467	387	309	232	156	82	8
54	1070	978	888	801	714	630	547	466	386	307	230	155	80	7
55	1068	977	887	799	713	628	546	464	384	306	229	153	79	6
56	1067	975	885	798	711	627	544	463	383	305	228	152	78	5
57	1065	974	884	796	710	626	543	462	382	304	227	151	77	4
58	1064	972	883	795	709	624	541	460	381	302	225	150	75	2
59	1062	971	881	793	707	623	540	459	379	301	224	148	74	1
60	1061	969	880	792	706	621	539	458	378	300	223	147	73	0

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I	60	61	62	63	64	65	66	67	68	69	70	71	72
II	3600	3660	3720	3780	3840	3900	3960	4020	4080	4140	4200	4260	4320
0	0	71	142	212	280	347	414	479	543	607	672	733	793
1	1	72	143	213	281	348	415	480	544	608	671	734	794
2	2	74	144	214	282	350	416	481	545	609	673	735	795
3	4	75	145	215	283	351	417	482	546	610	674	736	796
4	5	76	147	216	285	352	418	483	548	611	675	737	797
5	6	77	148	217	286	353	419	484	549	612	676	738	798
6	7	79	149	218	287	354	420	485	550	613	677	739	799
7	8	80	150	219	288	355	421	486	551	614	678	740	800
8	9	81	151	221	289	356	422	488	552	615	679	741	801
9	11	82	152	222	290	357	423	489	553	616	680	742	802
10	12	83	154	223	291	358	425	490	554	617	682	743	803
11	13	84	155	224	292	359	426	491	555	618	683	744	804
12	14	86	156	225	294	361	427	492	556	619	684	745	805
13	15	87	157	226	295	362	428	493	557	620	685	746	806
14	17	88	158	228	296	363	429	494	558	621	686	747	807
15	18	89	159	229	297	364	430	495	559	622	687	748	808
16	19	90	161	230	298	365	431	496	560	623	688	749	809
17	20	91	162	231	299	366	432	497	561	624	690	750	810
18	21	92	163	232	300	367	433	498	562	626	691	751	811
19	22	94	164	233	301	368	434	499	563	627	692	752	812
20	24	95	165	235	303	370	436	500	565	628	693	753	813
21	25	96	166	236	304	371	437	501	566	629	694	754	814
22	26	98	168	237	305	372	438	502	567	630	695	755	815
23	27	99	169	238	306	373	439	503	568	631	696	756	816
24	29	100	170	239	307	374	440	504	569	632	697	757	817
25	30	101	171	240	308	375	441	505	570	633	698	758	818
26	31	102	172	241	309	376	442	506	571	634	699	759	819
27	32	103	173	242	310	377	443	507	572	635	700	760	820
28	33	105	175	244	312	378	444	509	573	636	701	761	821
29	35	106	176	245	313	379	445	510	504	637	702	762	822
30	36	107	177	246	314	381	446	511	575	638	703	763	823

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<i>i</i>	60	61	62	63	64	65	66	67	68	69	70	71	7 ²
<i>ii</i>	3600	3600	3720	3780	3840	3900	3960	4020	4080	4140	4200	4260	4320
30	36	107	177	246	314	381	446	510	575	638	703	763	823
31	37	108	178	247	315	382	447	511	576	639	704	764	824
32	38	109	179	248	316	383	449	512	577	640	705	765	825
33	39	110	180	249	317	384	450	513	578	641	706	766	826
34	41	112	182	250	318	385	451	514	579	642	707	767	827
35	42	113	183	251	319	386	452	516	580	643	708	768	828
36	43	114	184	252	321	387	453	517	581	644	709	769	829
37	44	115	185	254	322	388	454	518	582	645	710	770	830
38	45	116	186	255	323	389	455	519	584	646	711	771	831
39	47	117	187	256	324	390	456	520	585	647	712	772	832
40	48	119	189	257	325	392	457	521	586	648	713	773	833
41	49	120	190	258	326	393	458	522	587	649	714	774	834
42	50	121	191	260	327	394	459	523	588	651	715	775	835
43	51	122	192	261	328	395	460	524	589	652	716	776	836
44	52	123	193	262	329	396	462	525	590	653	717	777	837
45	53	124	194	263	330	397	463	526	591	654	718	778	838
46	55	126	195	264	332	398	464	527	592	655	719	779	839
47	56	127	196	265	333	399	465	528	593	657	720	780	840
48	57	128	198	266	334	400	466	529	594	658	721	781	841
49	58	129	199	267	335	401	467	530	595	659	722	782	842
50	60	130	200	269	336	403	468	531	596	660	723	783	843
51	61	131	201	270	337	404	469	533	597	661	724	784	844
52	62	133	202	271	338	405	470	534	598	662	725	785	845
53	63	134	203	272	339	406	471	535	599	663	726	786	846
54	64	135	205	273	341	407	472	536	600	664	727	787	847
55	65	136	206	274	342	408	473	537	601	665	728	788	848
56	67	137	207	275	343	409	475	538	602	666	729	789	849
57	68	138	208	276	344	410	476	539	603	667	730	790	850
58	69	140	209	278	345	411	477	541	605	668	731	791	851
59	70	141	210	279	346	412	478	542	606	669	732	792	852
60	71	142	212	280	347	414	479	543	607	670	733	793	852

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	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
11	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280
0	852	911	969	1026	1083	1139	1194	1249	1303	1356	1409	1461	1512	1563	1613	1663
1	853	911	970	1027	1084	1140	1195	1250	1304	1357	1410	1462	1513	1564	1614	1664
2	854	912	971	1028	1085	1141	1196	1251	1305	1358	1411	1463	1514	1565	1615	1665
3	855	913	972	1029	1086	1142	1197	1252	1306	1359	1411	1463	1515	1566	1616	1665
4	856	914	973	1030	1087	1143	1198	1253	1307	1360	1412	1464	1516	1567	1617	1666
5	857	915	974	1031	1088	1144	1199	1254	1308	1361	1413	1465	1516	1567	1617	1667
6	858	916	975	1032	1089	1145	1200	1255	1308	1362	1414	1466	1517	1568	1618	1668
7	859	917	976	1033	1090	1146	1201	1255	1309	1362	1415	1467	1518	1569	1619	1669
8	860	918	977	1034	1091	1147	1202	1256	1310	1363	1416	1468	1519	1570	1620	1670
9	861	919	977	1035	1091	1147	1203	1257	1311	1364	1417	1469	1520	1571	1621	1670
10	862	920	978	1036	1092	1148	1204	1258	1312	1365	1418	1470	1521	1572	1621	1671
11	863	921	979	1037	1093	1149	1204	1259	1313	1366	1418	1470	1522	1572	1622	1672
12	864	922	980	1038	1094	1150	1205	1260	1314	1367	1419	1471	1523	1573	1623	1673
13	865	923	981	1039	1095	1151	1206	1261	1315	1368	1420	1472	1523	1574	1624	1674
14	865	924	982	1040	1096	1152	1207	1262	1316	1369	1421	1473	1524	1575	1625	1675
15	866	925	983	1041	1097	1153	1208	1263	1316	1369	1422	1474	1525	1576	1626	1675
16	867	926	984	1042	1098	1154	1209	1264	1317	1370	1423	1475	1526	1577	1627	1676
17	868	927	985	1042	1099	1155	1210	1264	1318	1371	1424	1476	1527	1577	1627	1677
18	869	928	986	1043	1100	1156	1211	1265	1319	1372	1425	1476	1528	1578	1628	1678
19	870	929	987	1044	1101	1157	1212	1266	1320	1373	1425	1477	1528	1579	1629	1678
20	871	930	988	1045	1102	1158	1213	1267	1321	1374	1426	1478	1529	1580	1630	1679
21	872	931	989	1046	1103	1159	1214	1268	1322	1375	1427	1479	1530	1581	1631	1680
22	873	932	990	1047	1104	1160	1215	1269	1323	1376	1428	1480	1531	1582	1632	1681
23	874	933	991	1048	1105	1160	1215	1270	1323	1376	1429	1481	1532	1582	1632	1682
24	875	934	992	1049	1106	1161	1216	1271	1324	1377	1430	1482	1533	1583	1633	1683
25	876	935	993	1050	1105	1162	1217	1272	1325	1378	1431	1482	1533	1584	1634	1683
26	877	936	994	1051	1107	1163	1218	1273	1326	1379	1432	1483	1534	1585	1635	1684
27	878	937	995	1052	1108	1164	1219	1273	1327	1380	1432	1484	1535	1586	1636	1685
28	879	938	996	1053	1109	1165	1220	1274	1328	1381	1433	1485	1536	1587	1637	1686
29	880	939	997	1054	1110	1166	1221	1275	1329	1382	1434	1486	1537	1587	1637	1687
30	881	940	998	1055	1111	1167	1222	1276	1330	1383	1435	1487	1538	1588	1638	1688

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	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
11	4380	4440	4500	4560	4620	4680	4740	4800	4860	4920	4980	5040	5100	5160	5220	5280
30	881	940	998	1055	1111	1167	1222	1276	1330	1383	1435	1487	1538	1588	1638	1688
31	882	941	999	1056	1112	1168	1223	1277	1331	1383	1436	1487	1539	1589	1639	1688
32	883	942	1000	1057	1113	1169	1224	1278	1332	1384	1437	1488	1540	1590	1640	1689
33	884	943	1001	1058	1114	1170	1224	1279	1332	1385	1438	1489	1540	1591	1641	1690
34	885	944	1001	1059	1115	1171	1225	1280	1333	1386	1439	1490	1541	1592	1642	1691
35	886	945	1002	1059	1116	1171	1226	1281	1334	1387	1439	1491	1542	1592	1642	1692
36	887	946	1003	1060	1117	1172	1227	1282	1335	1388	1440	1492	1543	1593	1643	1693
37	888	947	1004	1061	1118	1173	1228	1282	1336	1389	1441	1493	1544	1594	1644	1693
38	889	948	1005	1062	1119	1174	1229	1283	1337	1390	1442	1494	1545	1595	1645	1694
39	890	948	1006	1063	1120	1175	1230	1284	1338	1390	1443	1494	1545	1596	1646	1695
40	891	949	1007	1064	1121	1176	1231	1285	1339	1391	1444	1495	1546	1597	1647	1696
41	892	950	1008	1065	1121	1177	1232	1286	1339	1392	1444	1496	1547	1597	1647	1696
42	893	951	1009	1066	1122	1178	1233	1287	1340	1393	1445	1497	1548	1598	1648	1697
43	894	952	1010	1067	1123	1179	1234	1288	1341	1394	1446	1498	1549	1599	1649	1698
44	895	953	1011	1068	1124	1180	1235	1289	1342	1395	1447	1499	1550	1600	1650	1699
45	896	954	1012	1069	1125	1181	1235	1290	1343	1396	1448	1499	1550	1601	1650	1700
46	897	955	1013	1070	1126	1182	1236	1291	1344	1397	1449	1500	1551	1602	1651	1701
47	898	956	1014	1071	1127	1182	1237	1291	1345	1397	1450	1501	1552	1602	1652	1701
48	899	957	1015	1072	1128	1183	1238	1292	1346	1398	1451	1502	1553	1603	1653	1702
49	900	958	1016	1073	1129	1184	1239	1293	1346	1399	1451	1503	1554	1604	1654	1703
50	901	959	1017	1074	1130	1185	1240	1294	1347	1400	1452	1504	1555	1605	1655	1704
51	902	960	1018	1075	1131	1186	1241	1295	1348	1401	1453	1505	1555	1605	1655	1705
52	903	961	1019	1076	1132	1187	1242	1296	1349	1402	1454	1506	1556	1607	1656	1706
53	904	962	1020	1076	1133	1188	1243	1297	1350	1403	1455	1506	1557	1608	1657	1706
54	905	963	1021	1077	1134	1189	1244	1298	1351	1404	1456	1507	1558	1608	1658	1707
55	906	964	1022	1078	1134	1190	1244	1298	1352	1404	1457	1508	1559	1609	1659	1708
56	907	965	1023	1079	1135	1191	1245	1299	1353	1405	1458	1509	1560	1610	1660	1709
57	908	966	1023	1080	1136	1192	1246	1300	1354	1406	1458	1510	1560	1611	1660	1709
58	909	967	1024	1081	1137	1193	1247	1301	1355	1407	1459	1511	1561	1612	1661	1710
59	910	968	1025	1082	1138	1193	1248	1302	1355	1408	1460	1511	1562	1612	1662	1711
60	911	969	1026	1083	1139	1194	1249	1303	1356	1409	1461	1512	1563	1613	1663	1712

Tabula Logarithmorum Logisticorum prioris supplementum.

	89	90	91	92	93	94	95	96	97	98	99	100	101	102
"	5340	5400	5460	5520	5580	5640	5700	5760	5820	5880	5940	6000	6060	6120
0	1712	1761	1809	1856	1903	1949	1995	2041	2086	2130	2175	2218	2261	2304
1	1713	1761	1809	1857	1904	1950	1996	2041	2086	2131	2175	2219	2262	2305
2	1714	1762	1810	1858	1905	1951	1997	2042	2087	2132	2176	2220	2263	2306
3	1714	1763	1811	1858	1905	1952	1997	2043	2088	2132	2176	2220	2263	2306
4	1715	1764	1812	1859	1906	1953	1998	2044	2089	2133	2177	2221	2264	2307
5	1716	1764	1812	1860	1907	1953	1999	2044	2089	2134	2178	2222	2265	2307
6	1717	1765	1813	1861	1908	1954	2000	2045	2090	2135	2179	2223	2266	2308
7	1718	1766	1814	1861	1908	1955	2001	2046	2091	2135	2179	2223	2267	2309
8	1719	1767	1815	1862	1909	1956	2002	2047	2092	2136	2180	2224	2267	2310
9	1719	1768	1816	1863	1909	1956	2002	2047	2092	2137	2181	2224	2268	2310
10	1720	1769	1817	1864	1910	1957	2003	2048	2093	2138	2182	2225	2269	2311
11	1721	1769	1817	1864	1911	1958	2004	2049	2094	2138	2182	2226	2269	2312
12	1722	1770	1818	1865	1912	1959	2005	2050	2095	2139	2183	2227	2270	2313
13	1722	1771	1819	1866	1913	1959	2006	2050	2095	2140	2184	2228	2270	2313
14	1723	1772	1820	1867	1914	1960	2007	2051	2096	2141	2185	2228	2271	2314
15	1724	1772	1820	1868	1914	1961	2008	2052	2097	2141	2185	2229	2272	2315
16	1725	1773	1821	1869	1915	1962	2008	2053	2098	2142	2186	2230	2273	2316
17	1726	1774	1822	1869	1916	1962	2009	2053	2098	2143	2187	2230	2273	2316
18	1727	1775	1823	1870	1917	1963	2009	2054	2099	2144	2188	2231	2274	2317
19	1727	1776	1823	1871	1918	1964	2010	2055	2100	2144	2188	2232	2275	2317
20	1728	1777	1824	1872	1919	1965	2011	2056	2101	2145	2189	2233	2276	2318
21	1729	1778	1825	1872	1919	1965	2011	2056	2101	2146	2190	2233	2276	2319
22	1730	1778	1826	1873	1920	1966	2012	2057	2102	2147	2191	2234	2277	2320
23	1731	1779	1827	1874	1921	1967	2013	2058	2103	2147	2191	2235	2277	2320
24	1732	1780	1828	1875	1922	1968	2014	2059	2104	2148	2192	2236	2278	2321
25	1732	1780	1828	1875	1922	1968	2014	2059	2104	2149	2193	2236	2279	2322
26	1733	1781	1829	1876	1923	1969	2015	2060	2105	2150	2194	2237	2280	2323
27	1734	1782	1830	1877	1924	1970	2016	2061	2106	2150	2194	2237	2280	2323
28	1735	1783	1831	1878	1925	197	2017	2062	2107	2151	2195	2238	2281	2324
29	1735	1784	1831	1879	1925	197	2017	2062	2107	2152	2195	2239	2282	2324
30	173	1785	1832	1880	1926	197	2018	2063	2108	2153	2196	2240	2283	2325

Tabula Logarithmorum Logisticorum prioris supplementum.

	89	90	91	92	93	94	95	96	97	98	99	100	101	102
1	5340	5400	5460	5520	5580	5640	5700	5760	5820	5880	5940	6000	6060	6120
30	1736	1785	1832	1880	1926	1973	2018	2063	2108	2153	2196	2240	2283	2325
31	1737	1785	1833	1880	1927	1973	2019	2064	2109	2153	2197	2240	2283	2326
32	1738	1786	1834	1881	1928	1974	2020	2065	2110	2154	2198	2241	2284	2327
33	1739	1787	1835	1882	1928	1975	2020	2065	2110	2154	2198	2242	2285	2327
34	1740	1788	1836	1883	1929	1976	2021	2066	2111	2155	2199	2243	2286	2328
35	1740	1788	1836	1883	1930	1976	2022	2067	2112	2156	2200	2243	2286	2329
36	1741	1789	1837	1884	1931	1977	2023	2068	2113	2157	2201	2244	2287	2330
37	1742	1790	1838	1885	1931	1978	2023	2068	2113	2157	2201	2245	2288	2330
38	1743	1791	1839	1886	1932	1979	2024	2069	2114	2158	2202	2246	2289	2331
39	1743	1792	1839	1887	1933	1979	2025	2070	2115	2159	2203	2246	2289	2331
40	1744	1793	1840	1888	1934	1980	2026	2071	2116	2160	2204	2247	2290	2332
41	1745	1793	1841	1889	1935	1981	2026	2071	2116	2160	2204	2247	2290	2333
42	1746	1794	1842	1890	1936	1982	2027	2072	2117	2161	2205	2248	2291	2334
43	1747	1795	1842	1891	1936	1982	2028	2073	2118	2162	2205	2249	2292	2334
44	1748	1796	1843	1891	1937	1983	2029	2074	2119	2163	2206	2250	2293	2335
45	1748	1796	1844	1892	1938	1984	2029	2074	2119	2163	2207	2250	2293	2336
46	1749	1797	1845	1893	1939	1985	2030	2075	2120	2164	2208	2251	2294	2337
47	1750	1798	1846	1894	1939	1985	2031	2076	2121	2165	2208	2252	2295	2337
48	1751	1799	1847	1894	1940	1986	2032	2077	2122	2166	2209	2253	2296	2338
49	1752	1800	1847	1895	1941	1987	2032	2077	2122	2167	2210	2253	2296	2339
50	1753	1801	1848	1895	1942	1988	2033	2078	2123	2167	2211	2254	2297	2340
51	1753	1801	1849	1896	1942	1988	2034	2079	2124	2168	2211	2255	2298	2340
52	1754	1802	1850	1897	1943	1989	2035	2080	2125	2169	2212	2256	2299	2341
53	1755	1803	1850	1897	1944	1990	2035	2080	2125	2169	2212	2256	2299	2341
54	1756	1804	1851	1898	1945	1991	2036	2081	2126	2170	2213	2257	2300	2342
55	1756	1804	1852	1899	1946	1991	2037	2082	2126	2171	2214	2258	2300	2343
56	1757	1805	1853	1900	1947	1992	2038	2083	2127	2172	2215	2259	2301	2344
57	1758	1806	1853	1900	1947	1993	2038	2083	2128	2172	2216	2259	2302	2344
58	1759	1807	1854	1901	1948	1994	2039	2084	2129	2173	2217	2260	2303	2345
59	1760	1808	1855	1902	1948	1994	2040	2085	2129	2174	2217	2260	2303	2346
60	1761	1809	1856	1903	1949	1995	2041	2086	2130	2175	2218	2261	2304	2347

How Rules you have their whole list in making all logarithms the
 sections: And always observe that the Logarithm of 100 is nothing

All the Logarithms above 60'. are added as a Supplement to the Logistical Logarithms foregoing, and are useful when the Terms of Proportions exceed 60'. They are Negative, that is, to be subtracted where the others are added and e'contra. By observing these Four General Rules, you will have all their Use, in making the Proportions required in this Book, with much ease.

First, If 60'. be the first Number, and the second Number do not exceed 60'. then add the Logarithms of the Second and Third Numbers together, and you will have the Logarithm of the 4th. Number.

Secondly, If 60'. be in the first Place, and the second exceed 60'. take out the Logarithms of the Second and Third Numbers, and subtract the lesser Logarithm out of the greater. The Remainder shall be the Logarithm of the 4th. which if the second be greater than the third shall exceed 60'. but if the third be greater, shall be less than 60'.

EXAMPLE.

If 60' give 87' ————— the Log. of 87' is — 1613
 What shall 45' give ————— the Log. of 45' is — 1249 Sub.
 Which is the Log. of 65'. 15". ————— 364

Thirdly, If 60' be in the Second Place, and the First Number exceed 60', then the Logarithms of the First and Third Numbers being added together, will give the Logarithm of the 4th.

EXAMPLE.

If 62'. 7". give 66' ————— the Log. of 62' 7" is — 1503 } Add.
 What shall 36' 39" give ————— the Log. of 36' 39" is — 2141 }
 Which is the Logarithm of 35' 24" ————— 2291

Fourthly, If 60' be in the Second Place, and the First Number be under 60', then the Logarithm of the First Number must be subtracted from the Logarithm of the Third, and the remainder will give the Logarithm of the Fourth; but if the Log. of the first exceed that of the 3d. then their difference will be the Log. of a Fourth exceeding 60'. By these Four Rules you have their whole Use, in making all Sexaginary Proportions: And always observe that the Logarithm of 60'. is nothing.

F I N I S.

Memorial Verfes.

To know if it be Leap-Year.

Divide the Year by 4; what's left shall be
For Leap-Year 0, for Paſt 1, 2, or 3.

Here you may omit the Hundreds, and alſo the Twenties of the Year of our Lord; and only Divide the Reſidue by 4.

For Example.

Anno 1710, omitting the Hundreds, and alſo the Scores, if there were any, I Divide the Reſidue, which is 10, by 4, and the Remainder is 2; which ſhews it is the Second after *Leap-Year*.

To find the Dominical-Letter.

Divide the Year, its 4th, and 4, by 7;
What's left Subſtract from 7, the Letter's given.

A 1. B 2. C 3. D 4. E 5. F 6. G 7.

Example.

The Year of Chriſt is ——— 1710

The Fourth Part (omitting the Fraction) is ——— 427

To both which I Add the Number 4 ——— 4

The Sum is ——— 2141

Which Divided by 7 the Remainder is 6, which Subſtracted from 7 there is left 1; which ſhews that the *Dominical-Letter* for the Year 1710, is the *First* in the Order of the Alphabet, that is *A*.

Q q

But

MEMORIAL VERSES.

But the *Leap-Year* hath two *Dominical-Letters*, the latter found by this Rule, serveth from *St. Matthias-Day* to the Year's End, and for finding *Easter*: The former, next following in order from *A* to *G*, and beginning again at *A*, serveth from New-Year unto *St. Matthias*.

For the Golden-Number, Cycle of the Sun, and Indiction.

*When 1, 9, 3, to th' Year hath Added been
Divide by 19, 28, 15.*

To 1710 I Add 1, the Sum 1711 I Divide by 19, and there remaineth 1, which is the *Golden-Number* for the Year 1710.

Again, To 1710 I Add 9, and the Sum 1719, I Divide by 28, the Residue 11 is the *Cycle of the Sun Anno* 1710.

Lastly, To 1710 I Add 3, the Sum 1713 Divided by 15, the Remainder 3 is the *Indiction* for 1710.

The Prime or Golden-Number given ; to find the Epact.

*Divide by 3, for each one left Add 10,
30 reject ; the Prime makes Epact then.*

Anno 1710, the *Golden-Number* is 1, which Divide by 3, there is left 1 ; therefore 10 times 1 is 10, which Added to 1 the *Golden-Number*, the Sum is 11 the *Epact* for the Year 1710.

By the 19 Epacts, to find the Day of Easter-Limit from the Beginning of March inclusively.

*The Epacts take from 47 ; but 2
The greatest take from 77 ; 'twill do.*

Example.

Anno 1710 the *Epact* being 11, I Subtract it from 47, and the Residue 36 is *Easter-Limit*, *Anno* 1710, that is *April* the 5th, reckoning from the Beginning of *March* inclusively.

But when the *Epact* is 28 or 29, it must be Subtracted from 77, that so the Limit may remain. And the next following *Sunday* after the Limit is always *Easter-Day*.

Easter-

MEMORIAL VERSES.

*Easter-Limit, and the Dominical-Letter being given; to find
Easter-Day.*

*The Letter more by 4 from Limit take;
What's left from nearest Sevens, shall Easter make.*

Or thus;

Take the Number of the given Letter, more by 4, from the given Limit, and the Residue from the nearest greater Sum of Sevens: The last Remainder Added to the Limit, the Sum or Excess above 31 is *Easter-Day*, in *March* or *April*.

Example.

Anno 1710 the Letter *A* or 1 more by 4, is 5, which taken from the Limit 36, the Residue is 31; this taken from the nearest greater Sum Seven, viz. 35, there remaineth 4, which Added to the Limit 36, the Sum is 40, the Excess of which above 31 is 9; therefore the 9th of *April*, *Anno 1710*, is *Easter-Day*.

For the Age of the Moon, or the Day of her Change.

Janus 0, 2, 1, 2, 3, 4, 5, 6,
8, 8, 10, 10, these 10 the Epact fix,
The Sum (bate 30) to the Month-Day Add;
Or take from 30: Age or Change is had.

<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May.</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Octob.</i>	<i>Nov.</i>	<i>Dec.</i>
0,	2,	1,	2,	3,	4,	5,	6,	8,	8,	10,	10.

The Sum, if it be less than 30; or else the Excess above 30, Added to the Day of the given Month (rejecting 30, if need be) gives the Age of the Moon that Day; but Subtracted from 30, leaves the Day of the Change in (or from the Beginning of) that Month.

For the Day of the Full-Moon, Add or Subtract 15, to or from the Day of the Change.

Example.

MEMORIAL VERSES.

Example.

1. For the Age of the Moon, *Anno 1710 Feb. 16.* the Number of the Month 2, Added to the *Epact 11*, makes 13; which Added to 16, (rejecting 30, if need be) the Sum is 29, the Moon's Age requir'd.

2. For the Day of the Change (or New-Moon) in *Feb. 1710.* The *Epact 11*, with the Month 2, makes 13 (as afore) which Subtracted from 30, the Residue is 17, the Day of the New-Moon in *Feb. 1710.*

3. The Sum of 17 and 15 is 32, Subtract 30, gives 2, the Day of the Full-Moon in *Feb. 1710.* or from 17 take 15, and the Remainder 2 shews the same thing.

To find the Hour of the Moon's coming to South; and High-Water at London.

*The Moon's Age Multiply by 4; Divide
By 5 for Southing; Add 3 for the Tyde.*

But when the Age of the Moon exceeds 15, you may reject 15, as in this Example:

Anno 1710, Feb. 16. the Age of the Moon being 29 Days, I reject 15, and the Residue 14 Multiply'd by 4, makes 56; which Divide by 5, the Quotient is 11 $\frac{1}{5}$, the Hour of the Moon Southing; to which Add 3 Hours, and the Sum is 14 $\frac{1}{5}$ or 2 $\frac{1}{5}$ Afternoon, the Time of Full-Sea at *London.*

APPENDIX.

APPENDIX.

A



Anno. Dom. MDCLXXXII. Novembris. 9

*Observationes Syderum & imprimis Lunæ,
In Suburbio Londinenfi apud Illington. Annis
1682, 1683 & 1684, summa fide ac diligentia,
Sextante æneo sepedali habitæ.*

Novem. 7.	Hor. Cor.		Dist. Obl.
	H.	"	
P. M.	9.40.54	» Limb. prox a Polluce II.	19.39.00
	9.45.48	Repet.	19.36.15
	9.51.15	» Limb. prox a Castore	19.26.30
98. 6. Arg. An.	9.57.47	» Limb. remot. ab Aldebaran.	27.10.25
7. 7. D a ☉	10. 4. 5	Repet.	27.14.00
	10.14.27	» Limbus remot. a Rigel.	33. 8.25
27. 22'. 10".	19.36	Repet.	* 32.10.00
Ab Aldeb.	27.10	» Limbus ab Aldebaran.	27.26.15
	30.38	Repet.	27.28.15
	19.14.50	» Limbus prox a Polluce. — dub. —	16. 0.15
	24.11	» Limbus remot. a Capella.	33. 4.45
	28.29	Repet.	33. 6.00
	17.17.00	» à Cauda ♄.	27.57.45
	17.49.00	» à Lucid. pede II.	47.20.45
	18. 9.00	» à Corde Hydra.	23. 5.00
	10.19.36	Lunæ locus Observatus	2.31.20
		Lat. Aust.	4.14.25
Novem. 8.	19.34.00	» Limb. prox a ♄.	* 30.18.15
D. 21.		» ♄ 210. 35'. 10". 0°. 46'. 30". Bor.	
Novem. 11	16.34.20	» Limb. a Regulo.	7.37.00
	16.39.50	Repet.	* 7.39.30
Novem. 12	18.58.00	» Limb. a Regulo.	22.54.10
9.11. Arg. Ann.	19.02.02	Repet.	* 22.55.30
9.16. D. a. ☉		» ♄ 17.	
Novem. 21	5.21.45	» Limb. a ♄.	18.29.30
9.19. Arg. Ann.	0.26.15	Repet.	» ♄ 9.
1. 0. D. a. ☉		B	Lunæ

	Hor. Cor.		Dist. Obs.
Novem. 26	* 6.24.30	Luna Limb. a sequente Cauda w.	20.27.30
	6.27.30	Repet.	20.28.30
		» Obs. $\propto$ 9. 52'.	
Novem. 27	8.25.20	» Limb. a Lucid Mandib. Ceti.	47.51.0
	28.35	Repet.	47.50.0
» $\propto$ 23.	33.35	Repet.	47.48.10
9.23. Arg. Ann.	* 48.0	Marchab a Limbo prox.	23.5.40
3.7 » a $\odot$	51.0	Repet.	23.5.40
	8.58.20	» Limb. a Lucid Mandib.	47.38.20
		Distantia stellarum.	59.24.15
Decemb. 4	7.57.45	» Limbus remotus ab. Aldebaran.	20.47.30
	* 8.4.0	Repet.	20.51.0
» II 25.	10.30	» Limb. prox. a Polluce	25.6.0
10.0. Arg. Ann.	13.30	Repet.	25.4.20
6.2. » a $\odot$	22.50	» Limb. prox. ab Hum. dextro Orionis	11.22.30
Decemb. 5	8.17.0	» Limb. a Polluce	12.45.30
	20.5	Repet.	12.44.30
» 69. II.	26.55	» Limb. a Castore	14.13.40
10.1. Arg. Ann.	28.58	Repet.	14.13.30
6.16. » a $\odot$	31.34	Iterum.	14.12.50
	38.40	» Limb. ab Aldebaran	35.48.30
	* 42.10	Repet.	35.50.00
	52.50	» Limb. a Castore	14.7.0
	8.55.35	Repet.	14.6.10
Decem. 10.	14.58.15	» Limb. a Regulo	31.52.30
	15.2.20	Repet.	31.54.0
	15.11.0	* Tertio — » Obser. $\propto$ 27.2.	31.58.0
» $\propto$ 27.	15.39.20	» Limb. Aufst. ab ult. Cauda Ursae Majo.	51.53.40
10.6. Arg. Ann.	15.50.0	» Limb. a Regulo	32.16.30
8.26. » a $\odot$	15.53.50	Repet. exactius	32.18.0
	16.2.50	» Limb. Bor. a Cauda Ursae.	51.22.0
		» Limb.	

Anno. Dom. MDCLXXXII. Decembris. 11

	Hor. Cor.		Dist. Obs.
Decem. 13.	H. " "		0 " "
Arg. Ann.	19.19.5	☽ Limbus remotus a Spica ♀. ———	21.50.10
10 ^o . 9 ^o 1 ^o 2 ^o	23.0	Repet. ———	21.52.0
10. 7. 2. 2. 0.	47.55	Eadem dist. repet. ———	22. 2.30*
	50.50	Repet. ———	22. 3.35
		☽ Obser. m. 10. 14. 30. ———	
Decem. 21.	1. 0. 0	☉ Limbus remotus a ♀. ———	40. 8. 0
	2.20.0	Eadem repetita ———	40. 5.10
	3.23.21	☽ Limbus a ♀. ———	9.31.40
	3.45.30	Repet. sole splendente ———	9.23.40
	4.41.46	Repetita ———	9. 3.20
10 ^o . 16 ^o . Arg. An	5. 3.45	☽ Limbus ab Aquila ———	32.30.10
I. I. ☽ a ☉	5. 6.40	Repetita ———	32.30.50
☾ Obser.	5.15.15	☽ Limb. remot. a sequenti in cauda ♀. ———	7.51.20*
11. 47. 20.	5.18.15	Repetita ———	7.49.50
	5.27.33	Eadem distantia ———	7.45.40
Decem. 25	4.49.0	☽ Limb. a ♀. ———	37.16.30
P. M.	4.55.15	Repet. ———	37.18.00
☽ ☿ 29.	5. 5.20	Repet. ———	37.21.30
10 ^o . 20 ^o . Arg. An	5.13.37	Repet. ———	37.24.30
2.15. ☽ a ☉			

Hæc Observatio habita est flante Austro validissimo, instrumentumque quassante: itaque non nisi intra minuti terminum certam existimo.

Eadem die Hora 9^a. Sectio Lucis & Umbræ transivit per medium Insulæ Besbicæ & strinxit Pontum Euxinum ad Littus sinus Salmydessi.

Decem. 26.	0.18.0	☽ à Solis limbo proximo ———	36.40.0
	1.35.0	Repet. ———	36.38.0
	1.44.15	☽ Limbus a ♀. ———	47.54.30
	1.47.30	Repetita ———	47.56.00
	3.13.0	Repet. dub. ———	48.30.00
		B 2	Repet

	Hor. Cor.		Diff. Obf.
	M. ' "		o ' "
▷ Circa Nonag.	3.21. 5	Repet. ————	48.32.30
	3.26.15	Iterum. ————	48.35.00
	3.28.55	Iterum. — bona. ————	48.36.00
	3.43.55	Repetita. ————	48.41.40
Decem. 26	5.55.30	▷ Limbus ab Aldebaran. ————	53.33.10
	5.58.25	Repet. ————	53.31.50
▷ γ. 12.	6.11.45	▷ Limb. a cap. Androm. ————	30.32.15
	6.15.30	Repet. ————	30.32.00
10.21. Arg. An	6.29.45	▷ Limb. ab Aldebaran. ————	53.19.40
2.28. ▷ a ⊙	6.33.15	Repet. ————	53.18.30
	6.36.25	— — ————	53.17.30
	8.24.35	— — ————	

Visa est stella Telescopica in linea recta per cuspides, Lunæ, distans à borea ad longitudinem paludis Mæotidis sive 3¹/₂ circiter: atque alia quæ sequitur prædictam ad distantiam diametri Lunaris, ac parum Australior, tegebatur à borea parte Lunæ. Momentum Immerfionis non vidi.

8^h. 40'. 30". Tertius Jovis Satelles immerfit totaliter in Umbram ejus.

Decem. 29	5.12.35	♀ a. Marchab. ————	30.24.00
10.24. Arg. Ann.	5.20.21	♀ àb Aquila. ————	36.42.15
4.3. ⊙ a ⊙	5.22.45	Repet. ————	36.42.10
	6.19.40	▷ Limb. prox à Lucid γ. ————	23. 9.20
▷ δ. 21.	6.21.40	Repet. ————	23.10.00
	6.36.12	▷ Limb. remot. à Capella. ————	39. 4.50
	6.39.16	Repet. ————	39. 4.00
	6.44.48	▷ Limb. à Lucida γ. ————	23.15.50
	6.50.10	▷ Limb. remot. ab Aldebaran. ————	14.45.20
	6.53.23	Repet. ————	14.44.20

1682. Decemb. 30. Uratistaviæ; Immerfio boreæ contiguarum in quarta Hyadum, 5^h. 31'. 9". Immerfio Austrinæ, 5^h. 44'. 12". Deinde 9^h. 42'. 00" Occultatio Aldebaræ infra Mareotiden. 10^h. 55'. 54" Emerfio ad montem Hippochum. Hevelio Gedani accidit Immerfio, 9^h. 48'. 15". Emerfio vero 11^h. 1'. 30". pag. 139. An. Climat.

▷ Limb.

	Hor. Cor.		Diff. Obf.
	H. ' "		o ' "
Januarij 2.	7.28.20	☽ Limb. prox ab Aldebaran. — — — — —	42.54. 0
	7.31.00	Repet. — — — — —	42.55.20
☽. 69. 18. 10.27. Arg. Ann. 5.25. ☽ a ☉	7.41.00	☽ Limb. remotus à Polluce. — — — — —	9.50.30
	7.42.35	Repet. — — — — —	Eadem.
	7.46.36	☽ Limb. prox ab Aldebaran. — — — — —	43. 4.20
	8.10.00	Repet. — — — — —	43.16.10
Januarij 3.	8. 9.23	☽ Limb. remot. ab Aldebaran. — — — — —	58.59.15
	8.12.14	Repet. — — — — —	59. 1. 0
☽. ☿. 4. 10.28. Arg. Ann. 6.10. ☽ a ☉	9.28.24	☽ Limb. prox à Latere Urfæ Maj. — — — — —	47. 7. 0
	9.31.30	Repet. — — — — —	47. 6.30
	9.44. 8	☽ Limb. ab Aldebaran. — — — — —	59.51.30
	19. 0. 0	☿ à Corde ☿. — — — — —	5.31. 0
	19. 5. 0	☿ à Corde ☿. — — — — —	6.45.00
	19. 9.20	☽ Limb. à Corde ☿. — — — — —	15.24.30
	19.21. 0	☿ à Corde ☿. — — — — —	52.57. 0
Januarij 6.	19.36. 1	☽ Limb. à ☿. — — — — —	35.32.30
☽. ☿. 25. 11. 1. Arg. Ann. 7.28. ☽ a ☉	39. 1	Repet. — — — — —	35.34. 0
Januarij 9.	18.20. 0	☽ Limbus à spica ☿. — — — — —	18.26. 0
☽. ☿. 7. 11. 4. Arg. Ann. 9.7. ☽ a ☉	27.15	Repet. — — — — —	18.28.50
	37.40	☽ Limb. à Media Alæ ☿. — — — — —	31.00. 0
	41.00	Repet. — — — — —	31. 1.20
	48.10	☽ Limb. à Lance Bor. — — — — —	9. 2.00
	18.50.50	Repet. — — — — —	9. 0.40
	19. 1.00	☽ Limb. prox à Lucida Coronæ. — — — — —	39.41.00
Januarij 18.	1.24. 0	☿ à Limbo folis remoto. — — — — —	13.29.15
	1.33. 0	Repet. — — — — —	13.29. 0
Januarij 19.	10.35. 0	Mane. ☿ à ☉ Limbo remoto. — — — — —	12.27. 0
☿. ☿. 2. 11.13. Arg. Ann. 0.22. ☿ a ☉	5. 7.50	P. M. ☿ à Limbo ☽ prox. — — — — —	15.12. 0
	5.19.15	Repet. habeatur ratio Refractionis. — — — — —	15.15.20
		☿ Limb.	

	Hor. Cor.		Diff. Obs.
	H. " "		o ' "
Januarij 20	5.17.30	Limbo à Lucida mandibulæ Ceti. —	56.20.20
II.14. Arg. Ann.	5.26.25	Repet. Hæ duæ incertiores. —	56.17.30
I. 3. ☾ a ☉	5.33.10	Limbo à Lucida γ. —	50.57.00*
☽ Obs.	6. 1.20	Limbo ab extrem. Alæ Aust. Cygni. —	48.41.30
☿ 14. 3.50	6.11.40	Limbo à Lucida γ. —	50.39.30
	6.15.30	Repet. —————	50.37.20
Januarij 24	5.20.45	Limbo ab Aldebaran. —————	32.56.20
	5.25. 0	Repet. —————	32.54.40
☽ Obser.		5 ^a Ceti statim obtegenda ab Aldeb. —	32. 9. 0
☿ 2. 30'. 9"	6. 8.45	Immersio stellæ dictæ inter 50 & 55 grad.	
		Limbi obscuri ab Australi cornu. —	
II.17. Arg. Ann.	6.16.15	Limbo ab Aldebaran. —————	32.35.15
2.18. ☾ a ☉	6.28.20	Limbo bor. à Lucid γ. —————	15.26.20
	6.31. 5	Repet. ☿ * & ☽. —————	15.26.25
7.13. 0. Pono Emerfionem stellæ quintæ Ceti: nam 7h.13'. 20". emersam vidi, sed adeo arcte limbo adhærentem ut vix 10". interposita viderentur. Punctum emerfionis in ipso Nadir Lunæ, quantum judicare potui.			
8h. Saturnus visus est pene conjunctus cum Satellite ejus ad Austrum sito. Pone Satellitem Apogæum 10h. $\frac{1}{2}$.			
Januarij 26	1. 1. 0	☿ A Solis limbo remot. —————	8.25.30
	1.56. 0	Repet. —————	8.26.15
Observatio rarissima ac nunc primum facta.			
☿ recens à Conjunctione Solis retrograda. Hinc instituto calculo Veneris Inclinationem deduxi 3°. 23'. 00". satis accurate. Deinde.			
	4.56.30	Limbo remotus ab Aldebaran. —————	7.21.20
	5. 1.35	Limbo à prima Hyadum. —————	3.21.00
	5. 6.33	Repet. ab Aldebaran. —————	7.17.00
	5.35.40	Repet. —————	7. 5.20
			Lunæ

	Hor. Cor.		Dist. Obf.
Obfer.	H. 1 11		0 1 11
8. 28. 32. 40	*5.41.30	Lunæ Limbus à Polluce	51.58. 0
	5.45.45	Repet. ab Aldebaran.	7. 1. 0
5h.43'. ad	5.51.42	Lim. à Lucid pede II.	36. 7. 0
Nonages.	6.30. 0.	Mons Ætna cepit illuminari, vix tamen medietas	
11.19. Arg. Ann.		Ambitus ejus illustrata: simul Hiera, Sardinia atque insula	
3.11. 5 a 0		Erroris extra confinium visæ sunt. Deinde.	
	9h. 45'. 50".	Immersit stella Telescopica quæ præcedit	
		primam Hyadum, ac vix distabat à cornu Austrino ima-	
		ginato $\frac{1}{4}$ diametri Lunar: pone 7'. Tunc limbus orientalis	
		Ætnæ coincidebat cum sectione Lucis & Umbræ. Deinde,	
	11h. 42'. 45".	Immersio primæ Hyadum 12' vel 13' Min. à	
		cornu Austrino. Post 50'. hoc est, 12h. 32' 45" observavit	
		Dns. Edwardus Haines Emerfionem stellæ, in villa ejus	
		apud Totteridg.	
Januarij. 29	5.52.10	Lim. ab Aldebaran.	34.58.50
	5.56. 0	Repet.	35. 0.30
	6. 6.20	Lim. Austrinus à Castore.	14.46. 0
in 69. 10	6. 8.35	Repet.	14.45.20
11.21. Arg. Ann.	6.16.47	Lim. ab Aldebaran.	35.11.10
4.20. 5 a 0	*6.22.35	Repet.	35.13.45
Januarij. 30	5.36.25	Lim. ab Aldebaran.	49.43. 0
	5.38.25	Repet.	49.44. 0
in 69. 25	*5.40.40	Denuo	49.45.10
11.22. Arg. Ann.	5.45.25	Iterum repet.	49.47.40
5. 4. 5 a 0		Insula major Caspii & Mons Ætnæ in eodem Declinati-	
		onis parallelo.	
Januarij. 31	8. 1. 0	Limbus prox à cornu. hor. 8.	53.43. 0
	8. 6.55	Repet.	53.46.30
in 8. 12	8.14.50	Lim. prox à Calce Castoris.	40.50.30
	*8.16.50	Repet.	40.51.30
	8.18. 0	A Calce Castoris.	45.38.30
			Saturnus

	Hor. Cor.		Diff. Obs.
	H. ' "		o ' "
	8.23. 0	Saturnus à Calce: —————	45.44.40
	8.29.45	☾ Limbus prox: à Calce. —————	40.58.10
	21.41. 0	☿ à Solis limbo remoto. —————	13.52.50
		à centro vero. —————	13.36.30
Feb. 1.	9.11.50	☾ Limb. remotus à ♃. —————	11.49. 0
	9.14.10	Repet. —————	11.50.30
	9.17.30	Denuo. —————	11.52.20
	9.21.30	♃ à Corde ♎. —————	9. 5.40
	9.26.30	♂ à Corde ♎. —————	8.57.30
	9.37.45	☾ Limb. remotus à Corde Leonis: —	2.58.45
	*9.41.25	Repet. —————	3. 0.30
	☾ in 28° ♎. Sex Hor. post ☿ & Eclipsim.		
Feb. 2.	9.47.25	☾ Limb. remotus à ♄. — — ———	27.38. 0
	9.56.35	Repet. —————	27.43. 0
☾ in ♏. 14.0'	9.59.25	Iterum. —————	27.44.30
	10.16. 5	☾ Limb. remotus à Corde ♎. ———	18.43.40
	10.18.25	Repetita distantia. —————	18.45. 0
	11.33.10 Stella <i>Sigma</i> ♎ videbatur præcise & accuratissime, si quid unquam, in eodem parallelo declinationis cum Limbo Lunæ Austrino; ad quem Montes aliqui prominebant insigniter extra Lunæ circumferentiam integram.		
Feb. 6.	16.30.39	☾ Limbus à spica ♏. —————	26.39.10
* ☾ in ♏. 15. 0'	33. 2	Repet. —————	26.40.20
	37.32	Denuo. —————	26.42. 0
	Deinde successere nubes, ita ut non licuit distantiam alteram pro Latitudine mensurare.		
Feb. 7.	15.23. 0	☾ Limbus à spica ♏. —————	39.17. 0
☾ in ♏. 28. in maxima æquatione additiva	15.25.52	Repet. certius. —————	39.18.10
	34.23	☾ Limb. à Lance Austrina. ———	18. 4.20
	44. 0	Repet. —————	18. 7.40
		Luna	

	Hor. Cor.		Dift. Obf.
	H. " "		o " "
	15.57.15	☾ Limbus prox. à Yed Ophiuchi. —	12.39.50
	16. 1.10	Repet. —	12.40.00
	11.00	☾ Limbus à Spica ♀. —	39.36.10
	16.44	Repet. —	39.38.20
	18.35.12	☾ Limbus à spica ♀. —	40.32.40
☾ Obfer.	38.38	Repet. —	40.34.10
☾ 29. 24. 00	49.12	Denuo. —	40.38.25
	58. 7	* Iterum, orto Sole. —	40.41.40
	19. 4. 1	Repet. —	40.43.50
	8.27	Ultimo, evanescente stella ob vapores potius quam ob Solem. —	40.45.40
	18h.	Beshici centrum in sectione Lucis & Umbra.	
Februarii 8.	1.47.00	☾ à Solis Limbo remoto. —	22.39.00
Februarii 9.	8.10.00	Saturnum vidi cum Satellite ejus, in Apogæo sito, scilicet in ipsa conjunctione, nec in quam partem inclinaret judicare potui.	
Februarii 9.	17.51.15	☾ Limbus à Corde ♀. —	20.56.00
☾ in 2 24.00	17.54.35	Repet. — *	20.57.20
		Volui potius distantiam à borea frontis Scorpii metiri, sed nubes jam instans eam stellam velavit, ac brevi post ipsum cor eripuit. Deinde.	
	21.41. 0	☾ à Solis Limbo remoto. —	24.42.20
Februa. 11.	20.11. 0	☾ Limbus à Solis remoto. —	44.10.00
	20.24.20	Repet. —	44. 6.30
☾ n 1920	26.20	Repet. —	44. 5.45
☾ Obfer.	40.20	☾ à Solis limbo remoto. —	26.48.30
☾ 19.48.	29.47.35	☾ Limb. à Solis limbo remot. —	43.59.00
Februa. 15.	20.20.00	☾ à ☉ limbus remot. —	30.39.00
		à centro vero. —	30.22.45
		C	☾ Limbus

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
Februarii 21	7. 1.37	☾ Limbus ab Aldebaran. ————	23.13.30
	7. 4.31	Repet. ————	23.12.00
☾ in ☿ 12 & limite Austino.	7. 7.40	Denuo. ————	23.10.40
	7.18. 2	Repet. iterum. ————	23. 5.45
	8.59.30	☾ Limb. boreus à Lucida in pede ————	33.23.00
		Andromedæ. ————	
	9. 3.40	Repet. denuo. ————	33.23.30
Sectio Lucis & Umbræ per Inf. Apolloniam			
Februarii 25	6.46.50	☾ Limbus ab Aldebaran. ————	29.39.50
	6.49.40	Repet. exactius. ————	29.40.50
	6.55.28	☾ Limbus à Corde ♄ ————	50.25.30
	6.58.16	Repet. ————	50.24.00
☾ in ♄ 5.	7. 1.28	Repet. remoto Indice. ————	50.22.40
	7. 7.17	Deinde ab Aldebaran. ————	29.47.50
	7.10.47	Repet. ————	29.49.40
☾ Obser.	7.15.33	Repet. denuo. ————	29.51.30
♄. 5. 33 $\frac{1}{2}$.	7.18.37	Repet. iterum. ———— ☾ prope Nonag.*	29.52.40
	7.29.45	à Lucida Pleiadum. ————	40.30.45
	7.32.17	Repet. ————	40.31.50
	17.45.20	♂ à borea frontis ♄. ————	28.54.30
	17.52.00	Repet. ———— Eadem. ————	
Stella vicina Marti, ac distans ab eo 18 Min. ad boream, distabat à Bor. frontis ♄. 28°.44' 30" Mars stationarius ad initium Scorpil.			
Martii 1.	11.40.00	Mane. ex variis distantiis conclusa est	
		☿ à Centro Solis dist. ———— Deinde.	39.23.00
P. M.	7.24.52	☾ Limb. prox. à Corde ♄. ————	9. 5.30
☾ in ♄ 5.	7.27. 5	Repet. ————	9. 6.30
	7.33.48	Limb. prox. à corde Hydræ. ————	26.10.40
		Repet. ————	

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
	7.38.00	Repet. iterum. ————	26.11.45
	7.43.24	Deinde Limb. prox. à Corde Ω . —	9.15.10
	7.47.10	Repet. ————	9.16.00
	20.22.30	♀ à $\odot$ limb. remoto. ————	40. 3.10
	27.00	à $\odot$ limb. proximo. ————	39.31.00
	20.39.10	Repet. denuo. ————	39.31.15
Martii 2.	13.51.20	♂ Limbus prox. à Jove. ————	39.54.30
	14. 3.15	Repet. ————	40. 1.00
♂ Pleu. statim a Perigæo.	14.31.40	Repet. iterum. ————	40.16.00
♂ in π 23 $\frac{1}{2}$	Hæc observatio habita est non sine summa difficultate; nulla etenim stella fixa apparuit, ac per nubes crassiores quibus totum coelum obducebatur, tubo solo visus est Jupiter: idque solummodo per momenta. Satis tamen accuratas existimo has tres.		
Martii 3.	6.37.00	Mercurius ab Aldebaran. ————	59.25.00
	8.28.32	♂ à corde Ω . ————	12.20.40
	8.35.15	♂ à corde Ω . ————	11. 2.30
	8.46.10	♂ à calce Castoris. ————	43.33.50
♂ in π 6 $\frac{1}{2}$	8.52. 5	♂ à calce Castoris. ————	42.14.30
	8.59.30	♂ Limbus remot. à corde Ω . ————	41. 4.30
	9. 2.10	Eadem dist. repet. ————	41. 5.45
	9. 9. 5	Repet. denuo. ————	41. 9.50
	17.25.10	♂ Limb. prox. à bor. frontis π . ————	48. 4.30
	17.39.15	Eadem distantia. ————	47.56.30
♂ in π 10 $\frac{1}{2}$	17.43.20	Repet. ————	47.54.30
	17.47.40	Idem α limbus à σ ————	18.29.20
	17.51.00	Repet. iterum. ————	18.27.35
	9h. 20' Finis Austrinus Insulæ majoris Caspii, Horminius & Inf. Hiera in eodem parallelo declinationis.		
Martii 4.	9.29.30	♂ Limb. remot. à med. Alæ π . ————	15.56.00
	9.32.50	Repet. ————	15.57.40
♂ in π 21 $\frac{1}{2}$	9.43.20	♂ Limb. remot. à spica π . ————	6.53.50
	Repet. statim post, eadem. C 2		Repet.

	Hor. Cor.		Dist. Obf.
	H. ' "		° ' "
	9.51.5	Repet. ab Ala π . ————	16. 8.00
	9.54.10	Eadem dist. repetita. ————	16. 9.40
	10. 0.45	Limbo remotus a spica π . ————	6.55.30
Sectio Lucis & umbræ nondum invaserat paludem Mæotiden, sed fere marginem ejus occidentalem stringebat:			
Martii 6.	20.50.00	♀ à ☉ Limbo remoto. ————	42. 8. 0
	20.54.00	Repet. ———— a Centro $41^{\circ} 52' \frac{1}{4}$. ————	42. 8. 0
	20.58.30	♀ à Limbo ☉ proximo. ————	41.36.30
Martii 7.	15.24.20	Limbus a spica π . ————	47.40.30
☾ in ♄ 6.	15.29.10	Repet. ————	47.42.30
	15.53. 0	Limbo prox. a cap. Ophiuchi utcunq; ————	33.22.30
Plura ob nubes non licuit observare.			
Martii 8.	17.29.30	Limbo a bor. frontis π . ————	23. 5.10
	33.30	Repetita. ————	23. 6.30
☾ in ♄ 22.	38.55	Denuo certius. ————	23. 8.30
	48.30	Iterum. ————	23.11.30
	17.58.35	Limbus a ♀. ————	55.27. 0
	18. 3.30	Orto Sole integro. ————	55.25.15
	18. 6.25	Repetita distantia. ————	55.24.20
	20.22.30	♀ à ☉ limbo. remoto. ————	42.48.30
	20.26.35	♀ à ☉ limbo. prox. ————	42.16. 0
Martij 13.	18.10. 3	Limbo a ☉ prox. ————	41.53. 0
☾ in ♃ 20.	18.39.20	Repet. ————	41.44.10
	19.13.10	Repet. — sed incertius ob lumen. ————	41.31.30
Lunæ admodum debile, & cælum tenui nebula refertum: quæ dum his observationibus inhiarem Parheliion satis clarum ad dextrum Solis latus exhibuit.			
			☾ Limbus

	Hor. Cor.		Diff. Obs.
	H. ' "		o ' "
Martii 19.	6.57.21	Limbus ab Aldebaran. ————	38.42. 0
	7. 1.56	Repet. incertius. ob situm incomm.	38.40. 0
☾ in γ 27.0'	*7. 6.41	Repet. denuo certius & exacte. —*	38.36. 0
Luna hac vice in cornu tenuissimum instar lineæ curva- batur, ac circumferentia illuminata multo minor erat semicirculo. humilis erat, habenda itaque est ratio Re- fractionis:			
Martii 20	7.31.20	Limbus ab Aldebaran. ————	26. 5. 0
	7.34.53	Repet. ————	26. 3. 0
☾ in δ 9.	*7.42.20	Repet. certius. ————	25.59. 0
Deinde Lunam descendentem Nubes excepere, ex quibus vix sese extricaverat:			
Martii 21.	*4.23.40	Limbus a Solis remoto. ————	40. 0. 0
☾ in δ 21.	Distantia itaque centrorum 39°. 59' 30"; plures cepi di- stantias, sed ob nimiam venti Libonoti vehementiam vix satis fidus: præcedentem ut certiozem elegi.		
Martii 22.	6. 50.50	Limbus a Solis remoto. ————	50.34.30
	6. 54.10	Repet. ————	50.35.50
☾ in II 2½	6. 59.45	Iterum. ————	50.37.40
	*1. 3.20	Iterum & certius. ————	50.39. 0
	1. 5.20	Denuo & ultimo. ————	50.40. 0
Deinde vesperi, Luna applicabatur fulgenti oculo Tauri Aldebaran dicto. Caelum ab occasu Solis incertum, nunc nubilum, subinde serenum per vices, sæviante interea Africo hesteria violentiâ; unde agitabatur Tubus: satis tamen certo constat.			
	7h. 47'. 50"	Cuspitem Lunæ austrinam præcessisse stellam 63 Secunda temporis, sive Ascen. Rect. 15'. 45" stella erat borealis Cuspide 6'. 40" circiter. Deinde ob ventum plura in domicilio Sextantis habere non licuit: majori vero Tubo, dissipatis Nubibus, ex voto visa est.	
			8h. 20'

	Hor. Cor.	Dist. Obs.
D II 5. 20.	* 8h. 20' 8" Stella in linea recta per cuspides, distans ab Austrina & proxima paulo plus Joviali diametro: pone 1 minut. Nota quod in Conjunctione & paulo post Stella nudis oculis videri non potuit ob Lumen Lunæ. Deinde.	
	H. ' "	O ' "
	19.51.30	2 a ☉ limbo remoto. ———— 45.45.30
	20. 4. 0	repet. amoto Indice. ———— 45.46.00
Martii 23.	7. 7.45	Limbus ab Aldebaran ———— 12.21.00
D II 18. a.	7.12.13	repet. ———— 12.22.20
	*7.26.10	Limbus a lucid ped. Geminorum. ———— 16.53.00
	7.28.55	repet. ———— 16.51.40
	7.39.15	Limbus ab Aldebaran. ———— 12.34.20
	7.41.10	repet. ———— 12.35.10
	9.49.00	Visa est stella satis clara, quæque forsan 6am mag. excederet, jam emersa ex Luna: emeruisse videbatur quasi $\frac{2}{3}$ lucidi semicirculi a cornu Austr. Pone momentum Emerfionis ad 9h. 44', nec multum aberrabis. Hevelius ait se observasse Gedani Immerfionem hujus stellæ 9h. 55' 50", Horolog. corr. Emerfionem vero 10h. 55' 10" Acalia paulo australior immerfit 10h. 31' 56". Tertia vero erat in rectâ cuspidum 10h. 10' 50". 4 min. sub Australi. Stella prima & major <i>Hevelio</i> est in II 190. 1'. Lat. 4°. 44'. Austr. Anni Climact. pag. 145.
Martii 24.	7.40.50	Limbus ab Aldebaran ———— 26. 1.00
D 5 2.	7.44.38	Reper. ———— 26. 2.30
	7.46.45	repetita denuo ———— 26. 3.20
	7.56.00	Limbus à Jove ———— 40.52.20
	7.59.05	Repetita ———— 40.51.00
	*8. 3.40	Limbus à corde Leonis ———— 53.58.00
	8. 6.00	Repet. ———— 53.56.55

Hor. Cor.

Dist. Obs.

Dum hæc observabantur Cælum erat admodum tranquillum, unde bonas & certas existimo observationes: tenui vero nebulâ undiq; obducebatur, ita ut non nisi clariores stellæ transparerent, idq; lumine admodum debili, haud tamen accuratam observationem impediēbat.

H.	"			"
Martii 25.	7.49.50	▷	Limbus ab Aldebaran	39.50.30
	7.54.55		Repet. denuo	39.52.20
▷ 15 ¹ / ₂	*7.57.20		Iterum	39.53.15
	8. 4.25	▷	Limbus à Corde α. — bonæ —	40.12.00
	8. 7.00		Repetita.	40.10.40
	8.11.35		Denuo & ultimo	40. 8.30

▷ recens à quadraturâ prima. Sectio Lucis & umbræ 7h. $\frac{1}{2}$ quasi stringebat limbum orientalem Montis Argentarii Hevelii.

Martii 26.	7.35.12	▷	Limbus ab Aldebaran	53.50.20
	7.37.46		Repet.	53.51.40
	7.45.43	▷	Limbus à Regulo	26.14.00
	*7.47.52		Repet.	26.13.00
	7.50.28		Denuo	26.12.00
	7.55.30		Regulus à γ	13.18.20
	8.13.20		Repet.	13.18.40
▷ 19.	8.17.00		h à Regulo	11.51.10
	8.31.00	▷	Limbus à Collo Procyonis	16.35.00
	8.38.57	▷	Limbus à Polluce	13.34.10
	8.42.46		Rep.	13.35.40
Mars 6 diei ante	9.11.45	♂	a Spica ♀	6. 5.20
♂ ☉	9.20.40	♂	a Lucida Coronæ.	43.52.00
	9.33.10	♂	a 5 ^a Virginis five ext. Alæ Aust. ♀	31. 2.00
	9.39.35	♂	a Med. Alæ ♀. i.e. 7 ^a ♀	17.55.15
	16.53.00	♀	ab Aust. cornu ♀	31. 5.30
	17.31.45	♀	a limbo ☉ remoto statim ab ortu ☉	46. 2.40
				18. 0.

	Hor. Cor.		Dist. Obf
	H. ' "		o ' "
	18. 0.45	Repet. ————	46. 7.00
	19.43. 0	Denuo. ————	46. 9.30
Martii 27.	7.48.13	Limbus a Corde Leonis ————	11.46.30
	7.52.31	Repet. ————	11.44.30
in Ω . 14.	8. 2.51	Limbus a lucid. ped. II. ————	39.31.15
	8. 5.27	Repet. ————	39.32.15
	*8.11.12	Limbus a Regulo ————	11.35.50
	8.13.36	Repet. denuo. ————	11.34.50
Martii 28.	6.58.30	Limbus a Regulo. ———— incertius ————	2.33.30
	7. 6.00	Repet. ————	2.36.00
	7.11.30	Denuo & certissime ————	2.39.15
	9.21.00	Limbus a Corde Leonis iterum ————	3.39.00
in Ω . 29.	9.22.55	Repet. ————	3.40.15
	9.28.50	Limbus a 5 ^a Virginis ————	23.32.00
	9.31.00	Repet. ————	23.30.50
	9.36.00	Limbus a med. Al α five 7 ^a π . ————	36.35.20
	9.38.30	Repet. dist. ————	36.34.10
	*9.44.35	Limbus a Corde Leonis ————	3.50.10
	9.46.20	Repet. ————	3.51.00
Martii 29.	8.55.48	Limbus a Corde Leonis. ————	18.26.40
	8.58.30	Repet. ————	18.27.40
in π 14.	9. 6.17	a Media Al α π . ————	21.51.50
	9. 9.13	Limbus ab eadem. ————	21.50.30
	9.16.11	Limbus a Spica π . ————	35.39.40
	9.19.17	Repet. ————	35.38.00
	*9.23.52	Limbus a Corde Leonis. ————	18.40.00
	9.25.55	Repet. denuo. ————	18.41.10
Martii 30.	7.56.50	Limbus a Corde Leonis. ————	33. 0.15
	7.58.53	Repet. ————	33. 1.20
			8. 13.

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
Martii 30.	8.13.00	denuo. ————	33. 8.30
☾ in ♍ 28.	9.17.30	☾ Limbus a Media Alæ ☿. ————	6.42.40
	9.19.40	Repet. ————	6.41.30
	*9.25.00	☾ Limbus a Corde Leonis. ————	33.44.00
Martii 31.	7.40.55	☾ Limbus a Corde Leonis. ————	47.51.10
	7.49.15	Repet. ————	47.55.10
	8. 1.25	Iterum. ————	48. 2.20
	8. 4. 5	denuo. ————	48. 3.30
☾ in ♋ 13.	9.36.10	Postea repet. ————	48.51.15
	*9.39.30	ultimo. ————	48.52.30
Aprilis 3.	16.19.30	☾ Limbus a Lance Borea ————	17.00.00
☾ in ♌ 00.	23.30	Repet. ————	17. 1.40
Ob fortiorem diei Lucem non licuit plura observare. Nucleus Insulæ Majoris Caspii & Audus in eodem parallelo. Item. Finis Austrinus Mæotidis & parum infra Byzantium & supra Hieram & Porphyritidem. Item Horminius & Ætna in eodem parallelo.			
Deinde ob pluviam tempestatem aliaq; incommoda, per totum Lunæ decrementum nihil observatum.			
Aprilis 19.	8.26.57.	☾ Limbus a lucido ped. II. ————	19.33.40
☾ in ♏ 14.	8.32.32.	Repet denuo. ————	19.31.00
April 21.	8.12.22	☾ Limbus a Corde Leonis ————	43.30.10
☾. ☿. 12. 0.	8.14.35	Repet. ————	43.29.00
	*8.20.00	denuo ————	43.26.30
	8.31.55	☾ Limbus a Lucido pede II. ————	8.24.30
	8.34.55	Repet. ————	8.25.30
	8.41.20	☾ Limbus a Corde Leonis ————	43.16.00
	8.45.40	Repet. ————	43.13.50
D			8.28.

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
April 22.	8.28.15	» Limbus a Corde Leonis — — —	29.32.10
	*8.32.15	Repet. — — —	29.30.10
» 26.	8.42.40	» Limbus a Lucido ped. II. — — —	21.55.30
	8.46.20	Denuo. — — —	21.57.20
	8.52.00	» Limbus a Corde Leonis — — —	29.20.15
	8.54.10	Repet. Iterum. — — —	29.19.00

Interea Luna appropinquabat stellula quæ est 10. & Ty-
choni, habetque Longitudinem $\approx 27^\circ$ fere.

9h. 41' 10" Stella nondum erat in recta per Cuspides.

9. 45. 40. videbatur rectam insensibiliter superasse, nam
superveniens nebula momentum ipsum non concessit.

Distantia stellæ a cuspide Austrina 13 min. circiter.

9h. circ. Saturnus cum Satellite a Perigæo recente visus est
parum ultra cuspidem Ansæ occidentalis.

April. 24.	8.19.25	» Limbus a Jove. — — —	10.58.00
» in Nonagef.	8.22. 5	Repet. denuo. — — —	10.59.10
	8.26. 0	» a Corde Leonis. — — —	12.13.10
» 24. o.	8.36.50	» Limbus a Jove. — — —	11. 6.00
	8.39.15	Repet. — — —	11. 6.50
	8.43.50	» Limbus a Spica Virginis — — —	55. 6.00
	*8.46.00	Repet. certius — — —	55. 5.00

Post observationem habitam, visum est Cor Leonis » ap-
propinquare, itaq; majori Telescopio apparato, expecta-
bam, si forte tegeretur, momentum immersionis, vel
saltem Transitus: Dubium enim erat an occultaretur, nec
ne. Postea vero descendente Nonagesimo incidit.

9h. 51'. 00". Occultatio Comitis Cordis Leonis; estq;
stellula exigua Cordi apposita ad occasum, in eadem
quasi Latitudine.

Hor. Con.

Dist. Obs.

H. ' " O ' "
 9'. 58". 39. Occultatio Cordis ipsius sub limbo obscuro
 quasi 12 min. a Cornu Austrino. Deinde
 10h. 44'. 14". Emerfit Cor Leonis circa 50 grad. a Cuspide
 Austrina. Dum hæc observabantur complebatur circulus
 Insulæ Corficæ, & Sectio Lucis & umbræ transivit per Lit-
 tus Orientale Lacus Nigri Majoris.

Hevelio Gedani visa est Immerfio. 11h. 13'. 20". pag. 150.
 Ann. Climaſterici Hevelii.

April. 27.

9. 0.20	▷ Limbus a Regulo. ————	42.45 45
9. 3.40	Repet. ————	42.47.00
9. 7.20	Cor Leonis a Marte. ————	47.48.50
9.11.20	repet. denuo. ————	47.48.40
	Spica a Corde Leonis ————	54. 2.00
9.19. 5	▷ Limbus a Corde Leonis. ————	42.54.00
*9.21.45	▷ Limbus a Corde Leonis repet. ————	42.55.15

▷ in ≈ 8.

Maii 2.

15.37.20	▷ Limbus a præced. Capitis ♄. ————	16.40.00
15.40.20	repet. ————	16.38.30
15.51.30	▷ Limbus a seq; Cap. Sagittarii. ————	19.23.15
15.58.00	repet. denuo. ————	19.20.10

▷ in ♄ 22.

In duabus posterioribus, suspitioni locus est ne forsan tem-
 pora vitiosa sint per unum minutum; steterat enim Horo-
 logium ad 15h. 41'. atq; fortuito restitutum est : & no-
 tavi unâ vice 4', alterâ 5'. tardare ; itaq; in medio ince-
 dens 4½ Temporibus addidi.

16h. Finis Austrinus Mæotidis & Limbus Boreus Ætnæ in
 eodem parallelo. Sectio stringebat limbum occiduum
 Mæotidis.

Maii 6.

19. 0. 4	▷ Limbus prox. a ♄. ————	58.40.00
19. 4.12	repet. ————	58.38.20
19. 7.55	Denuo. ———— *	58.37.20
19.11. 4	Ultimo. ————	58.36.20

D 2

♀ Tunc

	Hor. Cor.		Diff. Obs.
	H. " "		o ' "
	♀ Tunc temporis habuit γ $12\frac{1}{2}$; δ vero $\approx$ 13.40 . circ.		
Maii 7.	15.35.15	▷ Limbus à ♀. ————	48.52.00
☾ $\approx$ 24. 40.	41.50	Repet. ————	48.49.30
	* 47.10	Denuo. ————	48.47.30
	15.50.20	Iterum. ————	48.46.40
Maii 8.	20.18.30	▷ Limbus à Venere. ————	36.37.00
☾ $\times$ 8. o'.	20.22.40	Repet. ———— *	36.35.40
	20.25.20	Iterum. ————	36.34.45
Maii 16.	9.55.30	♂ à Corde Ω . ————	9.53.40
♂ & h in Ω 15	9.58.00	Iterum ————	9.53.40
♂ $\approx$ 12 00	10. 3.00	h à Corde Ω . ————	10.25.00
	10.11.00	♂ à Corde Ω . ————	46.33.30
	10.13.30	Eadem distant. ————	46.33.30
	10.22.00	♂ à spica π . bis. ————	7.46.30
Maii 19.	9.41.35	▷ Limbus à Corde Ω . ————	32.11.00
☾ $\approx$ 23 $\frac{1}{2}$	* 9.44.55	Repet. ————	32. 9.00
	10. 9.00	Stella Telescopica immersit pone Lunam admodum vicina cornu Boreo.	
Maii 20.	8.46. 8	▷ Limbus à Corde Ω . ————	18.38.20
☾ Ω 7. 00.	8.50.20	Repet. ————	18.36.20
	Nondum complebatur Sinus extremus Ponti; & sectio per Lacum Thospitem, perq; occiduum ex Erichinidis scopulis & Infulam Phyliram.		
Maii 21.	10. 1.35	▷ Limbus à Jove. ————	5.28.30
	5.20	Repet. incertius ob nebulas. ————	5.30.25
☾ Ω 22.	8.35	Iterum & certius. ————	5.32.20
			Limbus

	Hor. Cor.		Diff. Obs.
	H. ' "		o ' "
	10.13.00	» Limbus à Corde ☿. — — — — —	3.37.39
	15.45	Repet. — — — — —	3.35.50
	9h. Sectio Lucis & Umbræ per Insulam exiguam superioris partis ponti Euxini, & forsan per Horminium.		
Maii 22.	9.34.25	Immerfit stella Telescopica sub Luna.	
	9.38.22	Alia Immerfit, utraq; borealior Lunæ Centro: ac circa 10 ^h etiam tertia immerfit, sed non observata fuit.	
	10.22.37	« Limbus à Med. Alæ ♀. — — — — —	29.40.00
	24.48	Repet. — — — — —	29.38.50
☾ in ♀ 6½.	30. 5	» Limbus à Corde ☿. — — — — —	10.48.50
	34.28	Repet. — — — — —	10.50.30
	10.37.28	Iterum. — — — — — *	10.52.00
	44.25	» Limbus à spica ♀. — — — — —	43.16.30
	10.47.45	Repet. — — — — —	43.14.45
Maii 23.	9. 0.50	» Limbus à Corde ☿. — — — — —	24.21.00
	9. 5.55	Repet. — — — — —	24.23.30
☾ in ♀ 20.	9.13.20	» Limbus à spica ♀. — — — — —	29.59.40
	9.15.28	Repet. — — — — —	29.58.40
Maii 27.	9.11.12	» Limbus a spica ♀. — — — — —	27.51.30
	9.16.50	Repet. — — — — —	27.54.10
☾ in ♀ 17.	9.23.20	» Limbus a Med. Alæ ♀. — — — — —	40.51.00
	9.26.10	Repet. — — — — —	40.52.10
	9.28.10	Iterum. — — — — —	40.53. 5
	9.35.30	♂ à Corde ☿. — — — — —	47.55.00
	9.40.30	Cor ☿ a spica ♀. — — — — —	54. 2.00
Maii 28.	8.56.30	» Limbus a Marte. — — — — —	46.55.30
☾ in ♀ 1.		Bene sed raptim ob nubes.	
	9. 2.30	Repet. — — — — —	46.58.00
		☾ Limbus.	

	Hor. Cor.		Diff. Obl.
	H. ' "		o ' "
Maii 29.	9.39.20	☽ Limbus proximus à spica ♏. — —	55. 2.00
☽ in ♏ 14 $\frac{1}{2}$.	9.41.45	Repet. — — — —	55. 3.15
Maii 31.	Luna applicabatur stellis Capitis Sagittarii: Præterierat jam Mediam capitis cum primum ab ortu conspiciebatur, eamq; ad austrum reliquerat: sequentem vero capitis limbo boreo strictura videbatur. Itaq; observationi invigilare volui: nubeculis tamen ingruentibus & per vices Lunam occultantibus, solummodo intervalla temporanea inter Stellam & Lunam Telescopio majori annotare licuit. Lunâ vero recente ab oppositione Solis & quasi rotundâ, Maculam dictam <i>Lacum Nigrum Majorem</i> elegi, tunc proxime in eodem parallelo existentem, itaq;		
☽ in ♏ 11.			
	h. ' "	h. ' "	× sequitur Mac. ' "
Maii 31.	11.12.51	Maculâ	11.14.34
	11.18.46	transit.	11.20.17
	11.25.49		11.27. 7
		Stella	1.43
		transit.	1.31
			1.18
			i. e. 25.45
			22.45
			19.30
	Stella erat Borealis Maculâ prædictâ $\frac{1}{3}$ intervalli inter Maculam & limbum Boreum.		
Junii 10.	22.00.40	Vel. 11d. 10h. 00' 40" Mane; Lunæ limbus a Solis limbo remoto. 41°. 27'. ☽ in ♏ 18 $\frac{1}{2}$.	
Junii 18.	5. 7.40	☽ Limbus a Solis limbo proximo. —	52.40.00
	5. 9.50	Repet. — — — —	52.41.00
☽ in ♏ 00.	5.12.00	☽ Limbus a Solis limbo remoto. —	53.13.00
	5.14.20	Repet. — Deinde. — — —	53.14.30
	9. 4.00	☽ Limbus a spica ♏. — — — —	47.39.30
	9. 7.00	Repet. — — — —	47.37.40
	9.11.40	♂ à Corde ♏. — — — —	54.14.00
		Spica a Corde ♏. — — — —	54. 2.00
		☽ Limbus	

	Hor. Cor.		Dist. Obs.
	H. ' "		° ' "
	9.20.00	▷ Limbus a Corde ♏. — — — — —	6.41.00
	9.22.00	Repet. — — — — —	6.42.15
Junii 19.	8.56.40	▷ Limbus a Spica ♏ — — — — —	33.29.00
	8.59.25	Repet. — — — — —	33.27.30
▷ ♏ 17.	9. 7.50	▷ Limbus a Corde Leonis — — — — —	21. 0.30
	9.11.50	Repet. — — — — —	21. 2.30
	9.23.15	▷ Limbus a Spica ♏. — — — — —	33.14.50
	9.25.30	Repet. — — — — —	33.13.20
9h. $\frac{1}{2}$ Infula Apollonia erat intra partem lucidam ultra Semidiam. istius Maculæ, simulq; Apollonia minor & Infula Cilicum (ni fallor) illustrari cœperant, ficut annuli in Sectione visæ.			
Junii 21.	9.10.25.	▷ Limbus a Corde Leonis. — — — — —	49.34.00
	ac statim nubes stellam occupavit. Deinde.		
≈ 15. ▷.	9.33.20	▷ Limbus a borea frontis ♏. — — — — —	43.41.15
	9.47.15	Repet. iterum. — — — — —	43.34.30
<i>Montuniates & Ligustinus</i> integri intra partem lucidam, & parum amplius: Macula vero albicans & clara in recta cum ipsis ad Boream (ni fallor <i>Leuco-petra dicta</i>) quasi in ipsa Sectione hærebat, Hora Nona circiter.			
Junii 22.	9. 6.40	▷ Limbus a Borea frontis ♏. — — — — —	29.56.40
	*9. 8.35	Repet. — — — — —	29.55.45
	9.42.31	▷ Limbus a media alæ ♏. — — — — —	23.27.20
▷ ♏ ≈ 29.	9.45.30	Repet. — — — — —	23.28.40
	9.51.45	▷ Limbus a Borea frontis ♏. — — — — —	29.37.00
	9.54.05	Rep. — — — — —	29.36.00
Sectio lucis & Umbra stringebat limbum orientalem Lacus Nigri Majoris & Corficæ: Vulcania intra partem lucidam visæ est.			
			Stella

	Hor. Cor.		Diff. Obs.
Junii 24.	H. " "		" " "
	9. 6.43. Stella incognita pone Lunam immerfit, parum supra medium obscuri limbi.		
D. in M. 27.	9.23.10	Limbus a Spica m. ————	37.36.00
	9.26.40	Repet. ————	37.37.30
	9.38.10	Limbus a seq. Cap. f. ————	45. 8.30
	9.40.20	Repet. ————	45. 7.20
	*9.49.30	Limbus a Spica m. ————	37.47.15
	9.52.45	Repet. ————	37.48.20
Illustrabatur littus Sinus Apollinis, & Nucleus Circinnæ vix integer intra Sectionem.			
Jun. 25. D in f 10.	9. 1.55	Limbus a Spica m. ————	50.41.30
	9. 6.15	Repet. ————	50.43.30
	9.19.45	Limbus a seq. Cap. f. ————	31.51.40
	9.22. 5	Repet. ————	31.50.50
	9.30.25	Limbus a Spica m. ————	50.52.30
	9.32.40	Repet. ————	50.53.30
Jam Porphyrites intra Sectionem apparuit & aliquid am- plius.			
Jun. 26. D 23½ f.	10.16. 5	Limbus a Borealissima frontis m. —	23.17.30
	10.18.20	Repet. ————	23.18.40
	10.25.10	Limbus a seq. Cap. f. ————	18.18.00
	10.30.55	Repet. ————	18.15.30
Jun. 27. D w 6½.	9.53.20	Limbus prox. a Bor. frontis m. —	37.30.20
	9.57.00	Repet. ————	37.32.00
Jun. 28. D w 19. o.	9.47.45	Limbus remot. a Bor. frontis m. —	50.39.30
	9.52.45	Repet. ————	50.41.50
Jun. 29. D w 2.	9.43.30	Limbus a seq. Cap. f. ————	20. 5.40
	9.46.25	Repet. ————	20. 7.00
		Limbus	

	Hor. Cor.		Dist. Ohf.
	H. ' "		o ' "
Junii 30.	15.20.30	Limbus a seq. Caudæ φ .	2.59.00
☾ $\approx$ 16.	24.50	Repet.	2.57.20
	15.33.15	Iterum.	2.54.20
Julii 9.	13.44.30. accurate, Emerfit Aldebaran è Luna paulo infra medium partis obscuræ, forsan 3. min. deinde.		
☾ II 8 $\frac{1}{2}$.	20. 9. 5	Limbus a Solis remoto	49. 1. 0
	20.14.10	Repet. denuo.	48.59. 0
Julii 17.	4.24. 0	Limbus a Solis remoto	49.56.30
☾ $\approx$ 24 $\frac{1}{2}$	4.36.55	Repet. denuo.	50. 1.30
	8.57.50	Limbus a Spica $\approx$.	23.27.10
☾ in $\approx$ 27.	9. 3.35	Repet.	23.24.00
	10.39.30	Cometa a Dubhe	30.36.30
	50.30	Cometa a lucid. Perfii.	36.36.40
Julii 20.	8.37.45	Limbus a Bor. frontis $\approx$.	19.49.00
☾ observ.	8.40.25	Repet.	19.47.10
$\approx$ 9. 34.	*8.45.00	Iterum.	19.45.00
	8.47.20	denuo.	19.43.55
	9.39.30	Cometa a lucid. lateris Perfii.	34.42.00
	9.54.00	Cometa a Dubhe.	32. 6.30
	10. 4.30	Cometa a lucid. Perfii.	34.41.00
Julii 23.	8.56.00	Limbus a Bor. frontis $\approx$.	20.51.30
	9. 6.55	limbus a seq. Capitis φ .	22.17.00
☾ in φ 19.	9. 9.30	Repet.	22.16.15
	9.28.00	Cometa a lucida Perfii.	32 40.30
	9.36.40	Cometa a Dubhe.	33.53.00
	9.44.40	Cometa a lucid. Perfii.	32.40.00
Julii 24.	9.26.40	Cometa a lucida Perfii.	31.58.30
	9.38.30	Cometa a Dubhe.	34.32.10
	E	☾ Limbus	

	Hor. Cor.		Diff. Obs.
	H. ' "		o ' "
☾ in ♍ 3.	9.57.40	☾ Limbus a Bor. frontis m. ———	33.59.00
	*9.58.50	Repet. stella humili & refracta. ———	33.59.30
	10. 7. 5	☾ limbus a sequente Cap. ♄. ———	9. 2.00
	10. 9. 0	Repet. ———	9. 1.10
	10.16.50	☾ limbus remot. a seq. Caudæ ♍. ———	46.27.00
	10.19.25	Repet. ———	46.26.00
	10.21.10	Iterum. ———	46.25.20
Julii 25. ☾ in ♍ 15.	8.48.00	☾ limbus a Bor. frontis m. ———	46. 8.40
	8.51.45	Repet. ———	46.10.20
	8.54.20	Iterum. ———	46.11.15
	8.59.00	Bor. frontis m a sequent. Capitis ♄. ———	43. 3.45
Julii 26. ☾ in ♍ 28.	9.17.20	Cometa a lucida Persii. ———	30.35.30
	9.25.20	Cometa a Dubhe ———	35.56.00
	9.41.20	☾ limbus occiduus & proximus a sequente Capitis Sagittarii ———	15.54.30
	9.43.40	Repet. denuo. ———	15.55.40
Julii 27. ☾ in ♍ 10.	9.38.45	Cometa a lucida Persii. ———	29.51.00
	9.46.20	Cometa a Dubhe ———	36.41.30
	9.50. 5	repet. & certius. ———	36.42.00
	9.59.20	Cometa a Capella. ———	13.55.00
	10. 9.30	☾ limbus prox. a seq. Cap. ♄. ———	28.20.30
	10.11.55	repet. ———	28.21.20
	10.13.20	Iterum & certius. ———	28.22.00
	10.18.50	☾ Limbus remotus a seq. Caudæ ♍. ———	9. 5.00
Julii 28. ☾ in ♍ 23.	10.20.20	repet. ———	9: 4.15
	9.19.00	Cometa a lucida Persii. ———	29. 7.00
	9.26.00	Cometa a Capella. ———	13. 2.20
	9.42.00	Cometa a Dubhe. ———	37.29.00
	10. 9.20	☾ Limbus remot. a sequente Cap. ♄. ———	40.58.30
	10.16.00	repet. ———	41. 1.00
		☾ Limbus	

	Hor. Cor.		Diff. Obl.
	H. ' "		o ' "
Julii 29.	8.17.00	☾ Limbus superior oriebatur. — — —	
☾ in ♋ 4.	9.12.50	☾ limbus remotus a seq. Cap. ♄. — —	52.35.00
	*9.16.15	Iterum. — — —	52.36.30
	9.24.15	☾ limbus a seq. Cauda ♄. — — —	15.11.30
	9.27.50	Repet. iterum. — — —	15.13.20
Julii 30.	9.29.00	Cometa a lucida Persii. — — —	27.36.00
	9.38.30	Cometa a Capella — — —	11. 9.00
☾ in ♋ 16.	9.46.00	Cometa a Dubhe. — — —	39.14.00
	10. 5.40	☾ limbus a seq. Cauda ♄. — — —	27.24.00
	10. 9.00	repet. cave de Stella. — — —	27.25.20
Julii 31.	9.26.50	Cometa a lucida Persii. — — —	26.49.30
	9.33.00	Cometa a Capella — — —	10. 8.15
☾ in ♋ 28.	9.42.00	Cometa a Dubhe. — — —	40. 9.50
	10.15.15	☾ Limbus a sequente Cauda ♄. — — —	39.18.20
	10.20.30	Repet. Cave de Stella. — — —	39.21.00
	10.32.50	☾ Limbus prox. a lucid. γ. — — —	37.36.00
	10.34.30	repet. denuo. — — —	37.35.20
	10.41.15	☾ Limbus a seq. Cauda ♄. — — —	39.29.30
Aug. 3.	13.52.00	Cometa a lucid. pede Andromeda. — — —	39.50.00
	13.57.30	Cometa a Capella — — —	6.35.30
☾ in ♋ 6.	14. 4.45	Cometa a Dubhe. — — —	43.35.30
	14.13.10	☾ Limbus ab Aldebaran. — — —	28.59.30
	14.15.50	Repet. melius. — — —	28.58.20
Aug. 4.	9.43.15	Cometa a lucida Persii. — — —	23.31.30
	9.51.00	Cometa a Capella — — —	5.34.30
	10. 1.00	Cometa a Dubhe. — — —	44.34.30
	10.11.00	Cometa a lucida γ. — — —	49.32.00
☾ in ♋ 19.	16.33.35	☾ Limbus ab Aldebaran. — — —	15.41.30
	16.37.10	repet. — — —	15.40.10
	16.39.10	iterum. — — —	15.39.30

	Hor. Cor.		Dist. Obf.
	H. ' "		o ' "
Aug. 5.	20. 4.00	☾ Limbus a Venere. —————	55.41.00
☽ in II 3.	20. 9.40	repet. —————	55.39.15
	20.15.00	Iterum & certius. —————	55.37.15
	20.39.30	♀ a ☉ limbo proximo. —————	23.51.30
	20.44.30	♀ a ☉ limbo remoto. —————	24.23.10
	20.48.20	♀ a ☉ limbo prox. repet. —————	23.51.30
Aug. 6.	9.25.00	Cometa a Capella. —————	3. 2.00
	9.33.00	Cometa a lucida Persii. —————	21.50.00
	9.48.00	Cometa a Dubhe. —————	47.15.00
	Circa 9 ^h . 20' Cometa exiguam quandam stellam super se habebat, adeo arcte conjunctam ut minori Tubo lumina confunderentur: 10 ^h . vero majori Tubo notabili spatio stellam reliquerat. Linea ducta a Cometa per Capellam dirigebatur in sinistrum femur Persii. Postea.		
☽ II 17.	21.25.55	☾ Limbus a Venere —————	43.15.40
	21.28.46	Repet. certius. —————	43.14.20
Aug. 8.	20. 9.15	☾ Limbus a ☉ remoto. —————	41.57.00
☽ in II 14.	20.14.45	☾ Limbus a ☉ proximo. —————	41.23.15
	Priorem repetere, omni adhibita diligentia, ob nubes creberrime volitantes, non concedebatur.		
Aug. 9.	8.33.40	Capella a lucida Persii. —————	19. 2.40
	9.13.30	Cometa a lucida Persii. —————	19.25.00
	9.36.00	Cometa a lucida Arietis —————	42.34.00
	9.42.40	Repet. certius —————	42.33.10
	Ob profundissimas tenebras observatio admodum difficilis fuit, satis tamen accuratam crede.		
	10 ^h . 0'. 0". Cometa in linea recta cum stella in sinistro cubito Aurigæ & flexura lateris Persii; & linea ducta per Capellam a Cometâ ferebatur in 27 ^{am} Draconis, quæ Tychoni		

Hor. Cor.		Dist. Obs.
H.	"	"
Tychoni habetur in $\approx 0^{\circ} 30'$ cum Lat. Bor. $71^{\circ} 4'$:		
15 ^h . Cometa visus est in linea recta cum Capella & sequen.		
Hoedorum: Item tantundem distabat a Capella quantum		
cubitus Aurigæ: simulq; angulus ad Cometam cum cu-		
bito & præcedente Hædo rectus erat. Deinde.		
☾ in ♄ 26.	16.20.00	☾ Limbus a Calce Gemini. — — — — — 26.17.20
	16.23.20	Repet. iterum. — — — — — 26.19.20
	16.24.20	Denuo & optime. — — — — — 26.20.20
Aug. 10.	10 ^h . o. o. Cometa erat in vertice Trianguli fere æquicruris	
Cometa in II. 14. 20. Bor. 19. 00	cum Hoedis, iis ad Boream imminens ac distans quasi	
	10. min. plus quam est distantia stellarum: linea ducra	
	a præcedenti Hædo in Polarem ferebatur satis exacte; ac	
Aug. 11. II. 12. 40. Bor. 18. 00	linea recta à cubito Aurigæ per Cometam multo propior	
	transivit præcedenti quam sequenti Hoedorum.	
	Culminante Fomalhaut, Cometa erat quasi 6 min. infra li-	
Aug. 12.	neam per Hoedos; & distabat a præcedenti non omnino	
	sed fere duplo distantia Hoedorum.	
	15.35.40	Cometa a Capella. — — — — — 9.37.00
Aug. 16.	15.43.30	Cometa a Polluce II. — — — — — 39. 1.20
	14. 6.30	Cometa a cornu bor. Tauri. — — — — — 17.42.20
	14.23.20	Cometa a Capella. — — — — — 20.42.40
Aug. 17.	14.30.40	Cometa a cornu bor. Tauri. — — — — — 17.43.40
	14.45. 0.	Linea à clariore pedis Persii ad Informem quæ
	præcedit caput Medusæ; & alia à boreâ quadrati in	
☾ in ♍. 19 ¹ .	cervice Tauri versus tertiam Hyadum ducta, transivit	
	per Cometam.	
	8.34.25	☾ Limbus a sequente Cap. ♄. — — — — — 52.45.00
☾ in ♍. 19 ¹ .	8.38.30	Repet. — ☾ humilis & refracta. — — — — — 52.43.10
	8.42.40	☾ Limbus a borea frontis ♍. — — — — — 10. 5.30
	8.44.40	Repet. — ☾ & * in Alt. æquali. — — — — — 10. 4.30
		☾ Limbus

		Hor. Cor.		Dist. Obf.
		H. ' "		o ' "
Aug. 18.	in ♄ 3.	8.12.45	Limbus a Lance Borea. ———	18.12.20
		8.15.10	Repet. ———	18.13.30
		8.22.50	Limbus a seq. Capitis ♄. ———	39.11.00
		8.25.20	Repet. denuo. ———	39.9.40
		11.50.00	Cometa a Capella. ———	27.29.00
		11.57.00	Cometa a Lucida Arietis. ———	22.17.00
		12.8.00	Cometa a Cornu boreo Tauri. ———	22.44.30
		12.15.10	Cometa a Capella iterum. ———	27.33.00
Aug. 19.	in ♄ 16.	8.8.5	Limbus a sequente Cap. ♄. ———	26.00.30
		8.9.50	Repet. ———	25.59.30
		8.21.20	Limbus a bor. frontis Scorpii, stella humili: habeatur ratio refractionis. ———	17.16.30
Aug. 20.		13.6.20	Cometa a Lucida Arietis. ———	18.1.20
		13.14.20	Cometa a Capella. ———	35.55.00
		13.22.15	Cometa a Corn bor. Tauri. ———	29.56.30
		13.27.30	Cometa a Capella. ———	35.57.30
Aug. 22.	in ♄ 24.	7.42.5	Limbus a stella quam habui pro seq. Caudæ ♄. ———	24.56.30
		Hæc stella duas alias sibi annexas ad Austrum habuit, unde caudam Capricorni non esse certo constabat.		
		7.47.45	Limbus a sequente Capitis ♄. ———	11.55.20
		7.51.5	Repet. distantia. ———	11.56.25
		8.3.50	Limbus a stella prius observata. ———	24.49.10
		9.10.40	Limbus a seq. caudæ ♄, ni fallor. ———	24.44.30
		9.17.00	Repet. ———	24.42.20
		9.19.15	Repet. iterum. ———	24.41.30
		14.45.00	Cometa ab Aldebaran. ———	24.12.00
		14.53.00	Cometa a Capella. ———	45.22.00
		15.7.30	Cometa ab Humero seq. Orionis. ———	43.46.20
		15.16.30	Cometa ab Aldebaran. ———	24.16.10

Hor. Cor.

Dist. Obs.

H. ' "

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Dum observabatur Luna, tenui nebula cœlum undiq; obducebatur, ita ut minores stellæ non transparerent nisi Telescopio. Hinc ortum est dubium de stella Capricorni à qua mensurata est Lunæ distantia. Proxima nocte stellas illas observavi.

Aug. 23.	8. 9.40	Limbus à sequente Cap. Sagittarii.	24.16.40
	8.13.20	Repet. ————	24.18.20
» Circa Nonag.	8.19.40	Limbus a sequente Caudæ ♄ — *	13. 8.20
» in ♄ 6 $\frac{1}{3}$.	8.22.20	Repet. ————	13. 7.00
	8.27.20	Limbus a sequente Cap. Sagittarii.	24.23.50
	8.30.15	Repet. denuo. ————	24.24.45

Loca. * *

Deinde stellarum heri observatarum supra Caudam ♄.

♄ 18. 35 $\frac{1}{2}$.	Boreæ.	Borea & clarior à seq. Capitis ♄ —	36.46.30
o. 11 $\frac{1}{2}$.	Lat. Aust.	Earundem media ab eadem. ———	37. 1.00
♄ 18. 48 $\frac{1}{2}$.	Mediæ.	Australior ab eadem. ———	37. 8.30
o. 39 $\frac{1}{2}$.	Lat. Aust.	Sequens Caudæ ♄ a seq. Capitis ♄.	37.28.50
♄ 18. 55.	Australis.	Præcedens Caudæ ♄ ab eadem. ———	35.44.30
I. 4.	Lat. Aust.	Borea trium a sequente Caudæ ♄.	2.25.20
		Media earum ab eadem. ———	1.55.15
		Austrina ab eadem. ———	1.30.00

Aug. 24.	7.39.16	Nucleus Sinæ, accurate in eodem parallelo cum seq. Caudæ ♄, stellam præcedebat 4' 13". Temp. i.e. 1°. 3 $\frac{1}{4}$.
	7.47.31	Idem Nucleus præcedebat stellam 4' 1". five 1°. 0' $\frac{1}{2}$.
» in ♄ 18.		stella parum australiore. Deinde.

8.14.45	Limbus prox. a sequente Cap. ♄. —	36.24.40
8.17.50	Repet. non sine difficultate per hiatus nubium.	36.25.50

Aug. 26.	9.19.40	Limbus remotus a Lucida γ. ———	52.34.00
	9.23. 5	Repet. & certius. ———	52.32.50
	9.31.40	Lim. remot. a seq. Caudæ ♄. ———	23.51.00
		» Limbus	

	Hor. Cor.	Diff. Obs.
	H. " "	o " "
Aug. 26.	9.35.55 Limbus proximus ab eadem. —	23.21.50
☾ in ☿ 12 $\frac{3}{4}$	Sequens Caudæ ☿ a 28 ^a . ☿, quæ est media trium contiguarum in Aquâ, quamq; Luna novissime reliquerat.	23.13.40
	9.43.30 Limbus remotus a Lucida Arietis. —	52.25.00
	9.47.45 Repet. iterum. — — — —	52.23.40
	9.56.30 Vicefima octava ☿ erat parum infra limbum Lunæ Austrinum, ita ut limbi Tangens per stellam ducta angu- lum cum Horizontali quasi trium graduum fecerit, Luna Apogæa Plena.	
	16. 4.20 Cometa difficillime invent. a luc. Pleiad. —	36.50.00
	16.15.20 Cometa a Rigel Orionis. — — — —	45.35.15
	Cometa ad 16h. 4 $\frac{1}{3}$ in ♍ 24°. 44'. cum Lat. Aust. 16°. 38 $\frac{1}{3}$.	
Aug. 27.	Vesper. quia Luna versabatur medio inter stellas Quadrati sub Piscem Australem, placuit primum observare eas stellulas: itaque.	
	8.43.00 Sequens inferiorum a seq. caudæ ☿. —	35.26.20
	8.45.00 Præcedens inferiorum ab eadem. —	34.33.10
	8.48.30 Præcedens superiorum ab eadem. —	34.42.40
	8.53.00 Sequens superiorum ab eadem. — —	35.38.10
☾ ☿ 24 $\frac{1}{4}$.	8.56.10 Limbus a sequente caudæ ☿. —	35.29.10
	8.58.45 Repet. — — — —	35.30.20
	9. 8.45 Limbus prox. a Lucida ♍. — —	37.10.40
	9.11.45 Repet. — — — —	37. 9.30
	9.18.00 Limbus a seq. caudæ ☿. — —	35.38.10
	9.21.20 Repet. denuo. — — — —	35.39.20
	15.00.00 Cometam tandem inventum, non observare licuit ob tenuitatem ejus, ob Lumen Lunæ, ac Nubeculam qua cælum leviter inficiebatur, unde ægre admodum conspectus est. Vidi tamen certissime, atq; simul uno intuitu Tele- scopii duas fixas satis vicinas, quibus Cometa quasi per- pendiculariter tunc imminebat. Clarius infra cometam 40' circiter, eum præcedere videbatur 5 Min. Deinde incrassata nebula	

Hor. Cor.

Dist. Obs.

H. " "

o " "

nebula nihil ulterius concessum; fere oblitus eram quod, 9h.¹/₂
Nucleus Macrae, limbus boreus Aetnae & finis Aultrinus
Mareotidis quam accuratissime fuerint in eodem declina-
tionis parallelo.

Aug. 29.
D in γ 18.

9.13.45	Limbus a sequente caudæ w. ———	59.23.00
9.17.10	Repet. — — — — —	59.24.30
9.25.00	Denuo & optime. — — — — —	59.28.00

17^h. circiter, jam tota palus Maotis extra partem Lucidam

Aug. 30.

9.00.00 | circiter, Nucleus Circinnæ & finis Bor. Mareotidis
in eodem declinationis parallelo. Deinde.

D in δ. 3.

15.17.33 | Immersio stellæ quintæ Ceti sub Luna, in-
gressa est autem prope montem Acaben Hevelii, vel
potius ad 145 grad. exterioris limbi Chartæ Hevelii.

Exitus etsi expectatus minime observabilis ob nubes.

Aug. 31.
D in δ. 16.

15.27.00	Limbus ab Aldebaran: ———	19.50.40
15.33.10	Repetita. — — — — —	19.48.40
15.37. 5	Denuo repet. — — — — —	19.47.10

Dum hæc observabantur Sectio Lucis & Umbræ transivit
per Insulam Macram, ita ut circulus ejus vix integer erat,
& nucleus in centro languidissimo lumine lucebat; simul
Sectio stringebat limbum superioris trium montium Mo-
scorum.

Sept. 1.

15.56.30	Limbus ab Aldebaran. ———	7.14.30
15.59.20	Repet. — — — — —	7.13.10
16. 5.10	Limbus à 5 ^a Ceti. ———*	24.58.00
16.10.20	Iterum. — — — — —	25. 0. 0
16.19.10	Limbus ab Aldebaran. ———	7. 6.25
16.24.00	Repet. — — — — —	7. 5.00

F

D Limbus

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
Sept. 2.	16.33.00	▷ Limbus ab Aldebaran. ————	5.42.20
▷ in II 11.	16.35.50	Repet. ———— *	5.43.30
	16.51.50	Repet. denuo. ————	5.49.50
	Sectio per Byzantium.		
Sept. 3.	15.31.30	▷ Limbus ab Aldebaran. ————	18.17.00
	15.35. 5	Repet. ————	18.18.30
	15.52.10	▷ Limbus à Calce II. ————	7.41.00
	15.54.20	Iterum incertius. ————	7.39.50
▷ in II 23 ¹ / ₂ .	15.55.55	Repet. melius. ————	7.39.25
Recens a quadra- tura decreſcente & in Maxima fere æquatione.	16. 1.30	▷ Limbus ab Aldebaran. ————	18.30.30
	16. 4. 5	Iterum. ————	18.31.20
	Deinde craſſa nebula fere Lunam ipſam eripuit; qua tamen paulatim attenuata denuo obſervatus eſt.		
	16.12. 0	▷ Limbus ab Aldebaran. ————	18.34.45
	Sectio ſtringebat Limbum occiduum Lacus nigri Majoris.		
Sept. 5.	16.29.25	◁ Limbus ab Aldebaran. ————	45.56.30
▷ in S 21.	16.34.40	Repetita. ———— *	45.59.00
	16.37.35	Iterum. ————	46. 0.30
	Sol accurate cum Perigæo Lunæ; unde maxima Æquatio ad iſtam Anomaliam.		
Sept. 6.	20.20.55	▷ Limbus à Solis remoto. ————	47.22.00
▷ in S 7.	20.23.00	Repet. certius. ————	47.21.00
	20.48.30	Repet. denuo & melius. ———— *	47.10.30
Sept. 14.	6.40.20	▷ Limbus à ſeq. Capitis 2. ———— *	44.43.30
▷ in III 27 ² / ₅	42.55	Repetita. ————	44.42.15
	46.15	Tertio. ————	44.40.40
	▷ Limbus		

	Hor. Cor.		Diff. Obs.
	H. ' "		0 ' "
Sept. 16.	7. 1.50	» Limbus à seq. Capitis Sagittarii. —	17.22. 0
» in ♄ 25.	7. 6.40	Repet. — — — — —	17.20.30
	7. 9.15	Denuo. — — — — —	17.19.30
	7.14.50	» Limbus à dextr. genu Serpentarii. —	12. 2. 0
	7.16.45	Iterum. — — — — —	12. 2.50
	7.21.00	Distantia Stellarum. — — — — —	28.47. 0
	7.31.30	» Limbus à seq. Cap. ♄. — — — — —	17.10.00
	7.34.15	Repet. denuo. — — — — —	17. 8.50
Sectio Lucis & Umbræ transivit per Byzantium, Sinum Peronticum & vallem Hami; & stringebat littora orientalia Ponti Euxini.			
Sept. 18.	7.19.30	» Limbus à seq. Cap. ♄. — — — — —	8.21.40
	7.22.10	Repet. bene. — — — — —	8.22.50
	7.28.15	» Limbus à seq. Caudæ ♄. — — — — —	29. 5.30
» in ♄ 20½	7.31.25	Iterum. — — — — —	29. 4.20
	7.36.50	» Limbus à seq. Cap. ♄. — — — — —	8.27.50
	7.40.00	Repet. denuo. — — — — —	8.29.20
Sectio, dum hæc observarentur, per Medium Lacus Nigri Majoris, qui totus nigricabat umbrâ montium circumjectorum; circulus vero ejus vix integer. 8h. 15' Insula Vulcania jam coepit illustrari, instar Lunulæ extra Sectionem visâ.			
Sept. 20.	10.16.40	» Limbus à seq. Caudæ ♄. — — — — —	3.38.00
	10.19.55	Repet. — — — — —	3.36.45
» in ♄ 16.	10.22.40	Denuo. — — — — — bona — — — — —	3.35.40
	10.31.40	Ultimo. — — — — —	3.32.30
Sept. 22.	7.44.10	» Limbus à seq. Caudæ ♄. — — — — —	19.24.30
	7.47.55	Repet. — — — — —	19.26. 0
	7.52.30	» Limbus à Lucida Arietis. — — — — —	56.12. 0
» in ♄ 9.	7.59.20	Repet. — — — — —	56. 9.20
	8. 6.10	» Limbus à seq. Caudæ ♄. — — — — —	19.32.15
		F 2	Repet.

Hor. Cor.		Dist. Obs.	
H.	"	O	"
8. 7.50.		Repet. ————	19.33. 0
8.11.00		Sequens Caudæ $\wp$ à Borea 3 ^{um} . in	22.46.30
		in Aqua Aquarii.	
8.13. 0		Eadem à media 3 ^{um} . in Aqua. ————	23.13.40
8.16. 0		Eadem ab Austrina. ————	23.19.45
8.23.10	☾	Limbus à seq. Caudæ $\wp$. ————	19.38.30
Sept. 23.	8. 9.30	☽ Limbus à seq. Caudæ $\wp$. ————	31.27. 0
	8.11.20	Repet. bona. ————	31.27.40
☽ in π 21.	8.16.20	☽ Limbus à Lucida Arietis. ————	44.54.40
	8.19.10	Repet. ————	44.53.40
	8.23.40	Repet. bene. ————	44.51.50
	8.31.40	☽ Limbus à seq. Caudæ $\wp$. ————	31.35.30
☽ Circa Nonag.	8.33.15	Repet. ———— dub. ————	31.36. 0
	8.35. 5	Iterum. ————	31.36.30
Sectio per Medium Mareotidis accuratè.			
Sept. 24.	8.48.50	☽ Limbus à seq. Caudæ $\wp$. ————	43.36. 0
☽ in γ 3.	8.51.30	Repet. ————	43.37. 0
	8.58.10	☽ Limbus a Lucida γ . ————	33.54.40
	9. 1. 0	Repet. ————	33.53.30
	9. 7. 0	☽ Limbus a seq. Caudæ $\wp$. ————	43.42.50
☽ Circa Nonag.	9. 9.30	Repet. ————	43.43.50
	9.11.50	Iterum. bene. ————	43.44.40
9.15. Nucleus Macræ, finis Austrinus Mareotidis & limbus boreus Ætnæ accuratissime in eodem parallelo:			
Sept. 25.	8. 8.30	☽ Limbus remotus a seq. Caudæ. $\wp$. ————	55.46.20
☽ in γ . 15.	8.17. 5	Repet. ————	55.50. 0
	8.21.30	Denuo & optime. ————	55.52. 0
Sæviebat Affricus insolitâ violentiâ, Lunam vero ex plagâ contrariâ ulterius observare licuisset, nisi densæ ac crebræ nubes à vento actæ obstitissent.			
			☽ Limbus

	Hor. Cor.		Dist. Obf.
	<i>H. I. II.</i>		<i>O I. II.</i>
Sept. 26.	8.49.45	Limbo a med. trium contig. in Aqua	44.51.40
	8.53.30	Repet. — — — — —	44.53.10
	9. 1. 0	Limbo prox. a stella 5 ^a . Ceti.	5.35.40
	9. 4. 5	Repet. — — — — —	5.34.25
in 27.	9.10.10	Limbo a Lucida Pleiadum.	29.42.15
	9.13.30	Repet. iterum. — — — — —	29.41. 0
	9.20.50	Limbo a stella in Aqua	45. 5.20
	9.23.15	Repet. denuo. — — — — —	45. 6.30
Sept. 27.	8.49. 0	Limbo a media trium in Aqua	56.58.40
	8.52. 0	Repet. — — — — —	56.59.50
	9. 1.50	Limbo a 5 ^a . Ceti.	6.32. 0
in 10.	9. 4. 0	Repet. bene. — — — — —	6.33. 0
	9.12.25	Limbo a Media trium in Aqua	57. 9.30
	9.16.45	Repet. — — — — —	57.11.30
	9.26.50	Limbo ab Aldebaran. stella refract.	25.26. 0
	9.31.30	Repet. — — — — —	25.24.10
Jam Sectio temeraverat Maotidem a parte occidua, & In-			
sula major Caspii in ipsa Sectione.			
Sept. 28.	8.45.00	Limbo a 5 ^a . Ceti	18.37.50
	8.49.20	Repet. — — — — —	18.40.10
	8.55.50	Limbo ab Aldebaran.	13.25.30
in 22.	8.57.40	Repet. — — — — —	13.24.40
	9. 5.20	Limbo a 5 ^a . Ceti.	18.48.30
	9. 8.10	Repet. — — — — — fere	18.50.30
	9.10.50	Iterum & bene. — — — — —	18.51.20
	9.21.30	Limbo remot. a lucida Pleiadum.	10.30.15
	17.21.00	h a Corde Leonis.	16.41.00
	17.26.00	h a Corde Leonis.	4.54.30
	17.32.45	Limbo ab Aldebaran.	9.57.20
	17.35.35	Repet. denuo. — — — — —	9.55.50
in 25 ¹ / ₂	17.43.40	Limbo a 16 ^a . II.	36.52.20
		Alde.	

Hor. Cor.		Diff. Obs.
H.	"	o ' "
17.48.30	Aldebaran a 16 ^a . Geminorum. ———	27. 2.30
18. 1.00	♀ a Corde Leonis. ———	40 16.30
18. 5. 0	♀ a Corde Leonis, repet. ———	40.17.40
	♀ humilis & refracta.	
Sept. 29. *9.7. 30. Nucleus Sinæ transivit per punctum notatum, &		
9.12.35. id est, post, 5'. 5". Aldebaran transivit parum		
admodum ad Austrum: hinc differentia Ascen-		
sionis rectæ Maculæ & stellæ 1 ^o . 16'. 15".		
9.15.44. Nucleus Sinæ iterum transivit, & post 4'. 51".		
9.20.35. Aldebaran quasi 1 min. Australior transivit,		
unde differentia Ascensionum rectarum fit		
1 ^o . 12'. 45".		
9.44.00	Aldebaran Australior > limb. austr. 2' $\frac{1}{2}$ aestimat.	
18.46. 5	> Limbus remotus ab Aldebaran. ———	3.14.50
18.50.55	Repet. ———	3.16.20
18.57.25	Iterum bene. ———	3.18.50
Dum hæc tria observarentur Sol nuper ortus splendebat		
clarissime, stella tamen optime conspicua erat.		
Deinde ob cælum continuò nubilum nihil observari potuit		
ante Octobris septimam.		
Octob. 7. 17.56.00 > Limbus a Corde Leonis ———		
18. 0.20 Repet. bene. ———		
18.13.00 > Limbus austrinus ab ultima Cauda		
Ursæ majoris. ———		
18.22. 0 Rep. melius. ———		
Sectio per medium paludis Mareotidis.		
Octob. 8. 18. 4.00 > Limbus a Jove. ———		
18. 6.20 Repet. bene. ———		
Lunam		

Hor. Cor. Dist. Obs.

H. ' " O ' "

Lunam nunquam vidi tenuiorem, quippe intra 21 horas Soli conjungendam: inter hiatulum nubium conspiciebatur, ac ab iis statim ab ultima observatione erepta est. Luna humilis refractionis correctionem postulat.

Octob. 13.	4. 3.10	» Limbus a Solis limbo remoto. —	47.53.00
	4. 6.40	Repet. — — — — —	47.54.15
» 7 19.	4. 9. 5	Iterum ☉ humilis. — — — — —	47.54.40
	5.38.15	» Limbus a seq. Capitis ♄. — — — — —	23.10.30
	5.42.15	Repet. — — — — —	23. 8.50
	5.46. 0	Iterum. — — — — —	23. 7.00
	5.53. 0	Denuo & ultimo. — — — — —	23. 4.10

Maotis jam integra, ac Sectio accurate per montem Coracem. 6^h. $\frac{1}{4}$ ♂ visus est ad ortum a stellâ Telescopica satis clarâ, æqualtus ac 14'. distans.

Octob. 14: » in vp 2.	5.27.30	» Limbus a seq. Capitis Sagittar. — — — — —	9.44.20
	5.33.50	Repet. — bene. — — — — —	9.42.00
	5.43.25	Tertio & optime. — — — — —	9.38.00

Octob. 15.	5.30.40	» Limbus a seq. Cap. Sagitt: — — — — —	3.27.50
	5.39.25	Iterum. — — — — —	3.31.20
» vp 15.	5.48.50	» Limbus a seq. Caudæ ♄. — — — — —	33.56.00
	5.51.40	Repet. — melius. — — — — —	33.55.00
	5.59.00	» Limbus a seq. Cap. Sagittarii. — — — — —	3.38.50
» 16.43.40	6. 1. 0	Repet. Sectio per Apolloniam. — — — — —	3.39.35
	16.43.40	Primus Jovis Satelles immerfit in Umbram	
16.50. Visus est Saturni satelles ad occasum, & supra lineam ansarum. Distantia perpend. in lineam Ansarum demissa à centro Saturni æqualis erat diametro Annuli proxime: itaq; Satelles post Perigæum.			

Octob. 16. » vp 28 $\frac{1}{2}$. cum ☿.	6.27.50	» Limbus a seq. cap. Sagittarii — — — — —	16.29.00
	*6.31.00	Melius repet. — — — — —	16.30.00
	6.35.00	Iterum sed incertius — — — — —	16.31.00
			» Limbus

	Hor. Cor.		Dist. Obf.
	H. ' "		o ' "
	*6.55.40	» Limbus a seq. caudæ w. — — —	20.51.30
	7.00.55	repet. — — — — —	20.49.40
	7.14.15	» Limbus prox. a lucida Aquilæ — — —	29.45.00
Octob. 17.	*5.39.10	» Limbus a seq. caudæ w. — — —	8.56.30
» in ♍ 10½	5.41.10	repet. — — — — —	8.55.50
	5.50.00	» Limbus a seq. cap. ♄. — — — — —	28.35.30
	5.51.45	repet. — — — — —	28.36.10
	5.56.20	» Limbus a seq. caudæ w. — — —	8.50.40
	5.58.40	repet iterum. — — — — —	8.50.10
Octob. 19.	*6. 6. 01	» Limbus a seq. caudæ w. — — —	15.17.30
» in ♋ 4½	Hanc unicam distantiam hac nocte observare licuit: cœlum enim erat undique nubilum, ac Luna non nisi per nubes tenuiores videbatur, idq; ægre. Volui tamen experiri, & ope Telescopii Sextantis stellam detexi, quæ statim ab observatione una cum Luna ab incrassatis nubibus eripiebatur.		
Octob. 21.	6.56.30	» Limbus a seq. caudæ w. — — —	39.22.30
» in ♋ 28½	6.59.30	repet. — — — — —	39.23.40
	*7. 7.35	» Limbus a 5 ^a Ceti — — — — —	34.17.30
	7. 9.50	repet. — — — — —	34.16.15
	7.15.00	» Limbus a seq. caudæ w. — — —	39.30.30
	7.17.15	repet. sed vix satis accuratè. — — —	39.31.00
	7.18.45	Iterum & melius — — — — —	39.31.30
Octob. 22.	6.37.25	» Limbus a sequente caudæ w. — — —	51.12.00
» in ♍ 10½	6.42.00	Iterum — — — — —	51.13.50
	6.51.20	» Limbus a quinta Ceti — — — — —	22.27.40
	*6.53.30	repet. denuo — — — — —	22.26.40
	7.11.10	» Limbus a seq. caudæ w. — — —	51.25.30
Octob. 23.	9. 5.50	» Limbus a Med. 3 ^{um} in Aqua ♎. — — —	41. 1.20
» in ♎ 24	9.11.35	repet. — — — — —	41. 3.10
		» Limbus	

Hor. Cor.		Dist. Obs.	
H.	"	o	"
9.17.10	☽ Limbus ab Aldebaran	41.35.00	
*9.23.5	repet. bene	41.32.30	
9.30.50	☽ Limbus a stella prædicta in aqua ♊	41.10.40	
9.33.25	repet. denuo	41.11.30	
17.34.30	h a corde ♏.	7. 3.30	
17.42.30	♋ a corde ♏.	21.15.00	
17.52.00	h a Media Alæ ♎.	33.17.00	
18. 7.00	♋ ab Humero ♎.	5.59.00	
Octob. 24.	7.48.30 ☽ Limbus occid. ab Aldebaran	29.59.00	
	7.51. 5 repet.	29.57.30	
☽ in ♏ 5½	*7.52.40 Tertio & ultimo	29.56.45	
Octob. 26.	7.44.00 ☽ Limbus ab Aldebaran	4.44.20	
	7.48.40 repet.	4.42.00	
☽ in ♏ 0½	*7.51.30 Iterum	4.40.40	
	7.56.30 denuo & Ultimo	4.38.20	
	18.42.50 ☽ Limbus a lucid. pede ♏.	29.20.20	
	18.57.20 ☽ Limbus a prima Hyadum	4. 9.40	
☽ in ♏ 5.	*19.1.50 repet. denuo	4.12.10	
Vesperis Sectio nondum temeraverat paludem Mæotidem sed fere ejus littus stringebat : mane ambitus ejus interruptus erat, ac defuit exigua pars ejus à latere occidentali. 19 ^h finis austrinus Mæotidis cum fine austrino Mæotidis in eodem parallelo.			
Octob. 27.	8.28.45 ☽ Limbus ab Aldebaran	8.22.00	
☽ in ♏ 13½	8.32. 5 repet.	8.23.50	
	8.36.20 Iterum & optime	8.26.20	
Octob. 28.	19. 9.00 ☽ Limbus ab Aldebaran	25.55.00	
	19.14.30 repet. — stella humili	25 57 00	
	19.22.00 ☽ Limbus a Corde Leonis	54.10.30	
☽ in ♏ 1.	19.25.15 Iterum	54. 9.00	
G		repet.	

Hor. Cor.		Diff. Obs.
H. 1 u		o 1 "
19.29.40	repet. _____	54. 7.20
19.31.55	denuo _____	54. 6.20
19.35.35	ultimo _____	54. 4.20

Sectio Lucis & Umbrae inter Macrocmnios montes (quorum alter conspicuus tangebatur à sectione) & stringebat finum extremum Ponti.

Octob. 29.	▷ texit 11 ^{ma} II, quæ jam tenet S 10.35'. cum Lat. Aust. 2.5'	
10.21. 0	Immerfio stellæ quasi 60 grad. a Cusp. Borea	
10.35.45	▷ Limbus ab Aldebaran. _____	35.26.20
▷ in S 10 ¹ / ₂ .	10.39. 0 Iterum. _____	35.28.10
10.41.20	Denuo. _____ *	35.29.20
11.12. 7	Emerfio stellæ ad Boream medii limbi obscuri.	
11.19. 0	Aldebaran à stella prædicta. _____	35.15.40

Dum hæc observarentur Sectio stringebat insulam Macram, ad limbum ejus occiduum. Postea.

18.35.30	h à Corde Leonis. _____	7.27. 0
18.38. 0	γ à Corde Leonis. _____	22.12.45
18.43.10	▷ Limbus ab Aldebaran. _____	38.57.40
▷ in S 14	18.48. 0 Repet. _____	38.59.20
18.53.40	▷ Limbus à corde Leonis. _____	41. 8.20
18.56.10	Iterum. _____	41. 7.10
19.50.20	Repet. elevato Sole aliquot Gradus. _____	40.42.50

Octob. 30. 10.37. 0 | Stella exigua, quam puto ultimam II. in lineâ rectâ per cuspides Lunæ obtusiusculas, distans à boreâ, 4' 30". Postea.

19. 4.40	◁ Limbus à Corde Leonis. _____	27.34.40
19.10.25	Repet. _____	27.32. 0
19.21.30	Iterum. _____	27.27. 0
19.23.55	Denuo & ultimo. _____	27.26. 0

Cor.

	Hor. Cor.		Dist. Obs.
	H. " "		o ' "
Octob. 31.	18.25. 0	Cor Leonis ab ultima II. — — —	32.48. 0
	18.32. 0	Sella quam prope Lunam observavi } hesternâ nocte, a corde Leonis.	31.35.40
		Iterum & melius. — — —	31.36. 0
	18.40.50	☾ Limbus a Calce Geminorum. — — —	40.33.30
	18.44. 0	Repet. — — —	40.35. 0
☾ in ♏ 11.	18.51.45	☾ Limbus a Corde Leonis. — — —	13.55.40
	18.54.30	Repet. — — —	13.54.30
	19.03.20	Iterum. — — —	13.50.30
	19.11.30	☿ à Corde Leonis. — — —	7.36.20
	19.14. 0	♃ à Corde Leonis. — — —	22.31.40
	19.17.05	☾ Limbus a Corde Leonis. — — —	13.44.30
	19.18.35	Repet. — — —	13.43.50
Novemb. 1.	19.27.10	☾ Limbus a Calce. Geminorum. — — —	54.54.20
	19.29.35	Repet. — — — *	54.55.40
☾ in ♏ 25.40	19.44.50	Splendente Sole Lunæ limb. a Jove. — — —	22.14.30
	19.46.55	Repet. — — —	22.13.30
	19.55.20	Iterum. — — —	22. 9. 0
	Dum hæc observarentur Luna notabili spatio supra Cor Leonis invec̃ta est, saltem gradu integro. Ista vero stella Aprilis 24. hujus anni tecta est a Lunâ. Occultationis observationem vide suo loco.		
Novemb. 2.	19.22.50	☾ Limbus a Corde ♏ — — —	14.44.30
	19.27.55	Repet. — — —	14.47.10
☾ in ♏ 10.	19.42.15	☾ Limbus a Jove. — — —	8.15.50
	19.45.25	Iterum. — — —	8.14.30
Novemb. 4.	18.31.20	☾ Limbus a Corde Leonis. — — —	43.34. 0
	18.34.50	Repet. — — —	43.36. 0
☾ in ♏ 9.	18.36.40	Denovo. — — —	43.36.50
	19. 0.25	Iterum. — — —	43.48.10
	19. 2.15	Repet. — — —	43.49.15
	19. 3.30	Ultimo. — — —	43.50. 0
		G 2	☾ Limbus

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
Novemb. 5.	19.11.30	☽ Limbus a Corde Leonis. — — — —	58.42. 0
☽ 24.	19.16.30	Reper. — — — —	58.44.30
	19.23. 0	Tertio & ultimo. — — — —	58.48. 0
Novemb. 6.	19.10.45	☿ à Corde Leonis. — — — —	23.24.20
	19.17. 0	☽ Limbus a Jove. — — — —	50. 9. 0
☽ 9.	19.19. 0	Reper. — — — —	50.10. 0
	19.22.20	Denuo. — — — —	50.11.40
	19.27.30	☿ à Corde Leonis iterum. — — — —	23.24.20
Novem. 10.	4.53. 0	☽ Limbus a sequente Cap. ♄. — — *	15.49.30
	5. 2. 0	Reper. denuo. — — — —	15.44.50
☽ 26. 20	5. 4. 5	Iterum. — — — —	15.44.10
	5. 5.55	Ultimo & melius. Luna humili habeatur ratio refractionis.	15.43.10
Novem. 15.	4.37.45	☽ Limbus a sequente Cauda ♄. — — — —	10.46.30
	4.41.20	Repetita. — — — —	10.48.20
☽ 20.	4.48.10	Seq. Cauda ♄ a med. 3 ^{um} in aqua ~	23.14.20
	4.52.10	☽ Limbus a media trium in aqua ~.	12.23. 0
	4.54.40	Iterum. — — — —	12.22. 0
	4.59.45	☽ Limbus a sequente Cauda ♄. — — — —	10.55.10
Novem. 16.	9.13.50	☽ Limbus a quintâ Ceti. — — — —	49.20. 0
☽ 13 ¹ / ₂ .	9.18.15	Repetita. — — — —	49.18. 0
		Ob nubes nihil ultra observatum.	
Novem. 18.	4.59.45	☽ Limbus a quintâ Ceti. — — — —	27. 3.20
	5. 1.35	Reper. — — — —	27. 2.30
☽ in γ 6.	5. 7.20	☽ Limbus a sequente Cauda ♄. — — — —	46.45.15
Novem. 21.	8.39.25	☽ Limbus ab Aldebaran. — — — —	21.18.40
	8.42.40	Reper. — — — —	21.17.20
		☽ Limbus	

	Hor. Cor.		Diff. Obs.
	H. ' "		o ' "
☾ in ♍ 14 $\frac{1}{2}$	8.49.30	☾ Limbus a 5 ^a . Ceti incertius.	10.56.30
	8.54. 0	Repet. denuo. — — — —	10.58. 0
	8.59.50	☾ Limbus ab Aldebaran. — — — —	21.10.50
☿ in ♍ 20	19.13.20	☿ à spica Virginis. — — — —	30.45.15
Novem. 22.	12.19.40	☾ Limbus occid. & remot. ab Aldeb.*	7.20. 0
☾ in ♍ 28.	12.27.40	Repet. — — — —	7.17. 0
Novem. 24.	6.52.55	☾ Limbus orient. ab Aldebaran. — —	16.53.20
	6.56. 0	Repet. — — — —	16.55. 0
		Præcedens Clavæ Orionis ab Aldeb.	19. 0. 0
☾ in ♏ 32.		Borea sequentium in Clava ab Ald.	21.10.40
		Austrina Contiguarum ab eadem.	21. 1.30
	7.11.35	☾ Limbus a Calce II. — — — —	8.56.30
	7.13.45	Repet. — — — —	8.55.20
	7.18. 5	☾ Limbus orient. ab Aldebaran. — —	17 7. 0
Novem. 25.	7.48.10	☾ Limbus ab Aldebaran. — — — —	30.37.30
	7.50.50	Repet. sed incertius. — — — —	30.39.15
☾ in ♏ 6.	7.56.20	Iterum bene. — — — — *	30.42. 0
	7.58.25	Ultimo. — — — —	30.43.15
Novem. 28.	18.26.30	☾ Limbus a Jove utrunq; — — — —	29.28. 0
☾ in ♏ 21 $\frac{1}{2}$	Difficillima observatio : Nubes etenim Lunæ conspectum vix concedentes omnes fixas & Jovem ipsum oculis nudis eripiebant. Telescopio vero, Jove tandem invento atq; maligne viso per intervalla brevissima, hanc observationem obtinui, idq; ægerrime ; quam tamen omni adhibita diligentia repetere haud licuit ; intra unum minutum tamen certam existimo.		
Novem. 29.	19.21. 0	☿ à spica ♏ — — — —	39.10.20
	19.28.20	☾ Limbus a Corde Leonis — — — —	11.17.30
	19.29.20	Repet. — — — —	11.18. 0
		☾ limbus	

	Hor. Cor.		Hor. Cor.		Dist. Obs.
	H. I. "		" I. M.		o' "
☾ in ♍ 6½	19.44.10	☾	Limbus a spica ♍		43. 1.20
	19.45.50		Repet. denuo.		43. 0.40
	19.53.15	☾	Limbus a Corde Leonis		11.29.10
	19.55.10		Repet. denuo		11.30. 0
	20. 1. 0	☾	à Corde Leonis		26. 1.20
Novem. 30	5. 1. 0	♂	à sequente Cauda ♍		11.55.30
	5. 3. 0		Repet. amora regula		11.55.30
	16.48.40		Immerfio primi Jovis satellitis.		
	17. 6. 5	☾	Limbus a Corde Leonis		24.25.20
	17.10.40		Repet.		24.27. 0
☾ in ♍ 20	17.13. 0	☾	à Corde Leonis.		26. 5.20
	17.16. 0	☾	à Corde Leonis		8.37.10
	17.22.40	☾	Limbus a med. Alæ ♍		15.59.20
	17.23.45		Repet.		15.58.40
	18.46. 5	☾	Limbus a spica ♍		29.32.30
	18.49.30		Repet.		29.30.50
Decemb. 1	22. 8.40	☾	Limbus a Jove.	*	14.58.40
☾ in ♍ 6½	22.11.30		Repet. denuo		14.59.50
Decemb. 3	18.53.20	☾	Limbus a Med. alæ ♍		27.51.20
	18.55.10		Repet.		27.52. 5
	19. 3.10	☾	Limbus a Lance Borea		11.54.20
	19. 5.15		Repet.		11.53.30
	19. 7.35	☾	Limbus a spica ♍		15.46. 0
☾ in ♍ 3½	19.14.45	☾	Limbus a med. Alæ ♍	*	28. 2. 0
	19.17.40		Iterum.		28. 3. 0
	19.26.10	☾	a spica ♍		44.25.30
	19.34.10		Repet.		44.26.10
Decem. 12	19.26.20	☾	à spica ♍.		57.15. 0
☾ in ♍ 17	19.32.10		Iterum, Planeta humili		57.16.40
	19.48. 0		Tertio & ultimo		57.18.40
			☾ limbus		

	Hor. Cor.		Dist. Obl.
	H. " "		o " "
Decem. 13.	4.56. 0	☾ Limbus a sequente Caudæ w	18.32.40
	4.59.25	Repet.	18.34. 0
	5. 9. 0	☾ Limbus a 5 ^a stella Ceti. bona.	55.10.20
☾ in ♋ 8.	5.10.40	Repet.	55. 9.40
	5.17.20	Iterum	55. 7. 0
	5.34. 0	Ultimo	55. 1.20
	Stella Telescopica supra primam Caudæ Arietis		
	à vicefimâ Piscium		23.18.40
	Prima Caudæ ♋ ab eadem		23.21.10
Decem. 17.	7. 2.50	☾ Limbus ab Aldebaran.	38.41.30
	7. 6.35	Repet.	38.40.15
☾ in ♋ 26.	7.13.35	Repet. iterum.	38.37.45
Decem. 18.	7.19. 0	☾ Limbus ab Aldebaran.	26.25.20
	7.26. 0	Iterum.	26.22.50
	7.50.30	Repet. melius.	26.14.10
☾ in ♋ 9.	7.52.20	Repet.	26.13.20
Decem. 19.	18.52. 0	Emerferat tertius Jovis Satelles ex Umbra.	
Decem. 20.	8. 2.10	☾ Limbus a Calce Geminorum.	26.44.40
	8. 7.20	Iterum	26.42.20
☾ in ♊ 4.	8.16.40	☾ Limbus a Lucida Arietis.	34.21.50
Decem. 21.	6.52. 0	☾ Limbus ab Aldebaran.	11.38.40
	6.54.55	Repet.	11.40. 0
☾ in ♊ 17.	7. 0.20	☾ Limbus a Calce Geminorum.	14.11.10
	7. 1.50	Iterum.	14.10.30
	Præcedens Clavæ Orionis ab Aldebaran.		19. 0. 0
	Hæc Australior Telescopica ab eadem.		19. 2.25
	Hæc præcedens ab Aldebaran.		18.28. 5
	Alteræ præcedentium & Australior ab Aldebaran.		18.18.15
			Sequens

	Hor. Cor.		Dist. Obl.
	H. " "		o ' "
	7.52. 0	Sequens è stellis ad 4 ^{am} Hyadum a Lucido pede Geminorum. ————	30.28.40
	7.55. 0	Boreal. ad 4 ^{am} Hyadum superior ab eadem	30.57.40
	7.57. 0	Borea Contiguarum clararum ab eadem.	30.58.15
	8. 0. 0	Austrina Contiguarum a Lucid. ped. II.	30.57.30
	8. 3. 0	Sequens Contiguas ab eadem. ————	31.32.30
	8. 7. 0	Prima Hyadum ab eadem. ————	33. 6.15
	8.11. 0	Aldebaran a Lucido pede III. ————	29.10.30
	8.17. 0	Aldebaran a Capella. ————	30.42.40
	8.25. 0	Sequens ad 4 ^{am} Hyadum a Capella. ————	31.22. 0
	8.28. 0	Borealiū superior a Capella. ————	31.20.30
	8.30. 0	Borea Contiguarum a Capella. ————	31.42.30
	8.34. 0	Austrina Contiguarum a Capella. ————	31.47.30
	8.36. 0	Sequens Contiguas a Capella. ————	32.11.10
	8.39. 0	Prima Hyadum a Capella. ————	32.39. 0
Decem. 18.	8.43.50	Lunæ limbus ab Aldebaran. ————	12.27.40
Decem. 22.	18.34.50	Limbus remot. a Corde Leonis. ————	49.40.20
Decem. 22.	18.39.15	Repet. Luna humilis. ————	49.37.35
Decem. 22.	18.54. 0	h à Corde Leonis. ————	8.18.30
Decem. 22.	18.58. 0	h à Corde Leonis. ————	27.11. 0
Decem. 22.	19. 0. 0	Stella Jovi vicina ad Aust. a Corde S.	27.15.40
Decem. 22.	19. 5. 0	Cor Leonis à spica m. ————	54. 1.50
Decem. 24.	7.49.20	Limbus a Calce Geminorum. ————	27.59. 0
Decem. 24.	7.52.45	Repet. ————	28. 1. 0
Decem. 24.	8. 0. 0	Calx II ab Afello Austrino. ————	33.24. 0
Decem. 24.	8. 8. 0	Limbus ab Afello Austrino. ————	5.15.20
Decem. 24.	8.11.20	Repet. bene. ————	5.13.50
Capiebatur hæc distantia, quia Luna directe tendebat in hanc stellam, eamq; obtegere debuit ante Solis exortum: itaq; sub horam 6 ^{am} matutinam, detexi Telescopio 24 pedum stellam adhuc ad ortum, sed brevi eripiendam a Lunâ. Accidit autem			
			19h. 10'

	Hor. Cor.		Dist. Obf.
	H. ' "		o ' "
	19. 10' 5".	Immerfio Afelli Auftrini, in rectâ cum Porphyritide & Besbico, five ad 101 exterioris Limbi Hevelii.	
	19h. 58' 40".	Pono Emerfionem, ad 321 grad. interioris Limbi, five è regione Boreæ partis Mæotidis: fed jam diei Lux nimis clara de momento me non omnino fecurum fecit; intra paucula fecunda vero certum exiftimo. 19h. palus Mæotis jam temerari cœpta, manentibus adhuc lit-toris punctulis in ipfâ Sectione.	
Decem. 25.	8.43.10	» Limbus a Calce II. ————	42.35. 0
	8.46. 0	Repetita. Deinde mane. ————	42.36.20
» in ♏ 18½	19.42.20	» Limbus a Corde Leonis. ————	6.40.30
	19.44. 0	Repet. melius. ————	6.40. 0
	19.50.50	» Limbus a Jove. ————	33.43.40
Decem. 26.	19.10.45	» Limbus a Corde Leonis. ————	7.37.15
	19.14.35	Repet. ————	7.39. 0
» in ♏ 3	19.19. 0	Cor Leonis a Saturno Lunæ vicino. ————	8. 9.30
	19.23.50	» Limbus a fpecie ♏ ———— dub. —	46.45. 0
	19.27. 0	Repet. ———— bona ————	46.42.30
	19.29. 0	Repet. a fpecie ♏ ————	46.41.30
	22. 8. 0	♀ à Limbo Solis proximo. ————	11.29.40
	22.13. 0	♀ à Limbo Solis remoto. ————	12. 2.20
	22.19. 0	♀ à Limbo proximo Solis. ————	11.30.10
	22.29.30	Repet. Alta ♀ 9 gr. circiter. ————	11.30.20
Decem. 27.	10.34. 5	« Limbus a Corde Leonis ————	17.49.20
	10.38. 5	Repet. ————	17.51.25
» in ♏ 13.	10.45.15	« Limbus boreus ab Ult. Caudæ Urfæ ————	51.21. 0
	10.47.25	Repet. ———— (Majoris) ————	51.21.20
	10.52.40	« Limbus a Corde Leonis ————	17.59.25
	10.55. 0	Repet. iterum ————	18. 0.30
	19. 1.20	» Limbus a Jove ————	5.51.20
		H	Repet.

	Hor. Cor.		Dist. Obs.
	<i>H</i> " "		<i>o</i> " "
☾ in ♏ 16 $\frac{1}{2}$	19. 3.15	Repet. ————	5.50.20
	19.13.50	Repet. a Jove ————	5.45. 0
Decem. 28	18.16.10	h à Corde Leonis ————	8. 5. 0
	18.17.40	☿ à Corde Leonis ————	27.12.30
	18.19.40	☽ Limbus a Corde Leonis ————	35.53.20
	18.21.30	Repet. ————	35.54.10
	18.26. 5	☽ Limbus a Lance Austrina ————	39.34.20
☾ in ♏ 1.	18.28. 0	Repet. ————	39.33.30
Perigæa.	18.33.25	☽ Limbus a Corde Leonis ————	35.59.10
	18.36.20	Repet. denuo ————	36. 0.20
	18.42.30	☿ a spica ♏ ————	27. 0.30
	18.46.30	h a spica ♏ ————	46. 8.20
	18.53.10	☽ Limbus a Media Alæ ♏ ————	4.28. 0
	18.54.55	Repet. ————	4.27.15
Decem. 29.	19.31.20	☽ Limbus a Jove ————	23.37.40
	19.33.20	Repet. ————	23.38.40
☾ in ♏ 15 $\frac{1}{2}$	19.39.30	☽ Limbus a Media alæ ♏ ————	10.28. 0
	19.41.25	Repet. ————	10.29. 0
Decem. 30.	19.37.35	☽ Limbus a Med. Alæ ♏ ————	24.36.10
	19.40.40	Repet. denuo ————	24.37.30
☾ in ♏ 0.	19.51.40	☽ Limbus a Jove ————	37.55.40
	19.55. 5	Repet. ————	37.57. 0

Anno Dom. MDCLXXXIV.

Januarii 1.	19.18.20	☽ Limbus a spica Virginis ————	39.15. 0
	19.20.10	Iterum ————	39.16. 0
☾ in ♏ 28 $\frac{1}{2}$	19.22.45	Repet. denuo ————	39.17.15
	19.26. 0	Spica Virginis a bor. frontis ♏ ————	39.27.20
	19.46.50	Tantundem distitit Luna limbus ————	39.27.20
	21. 0.15	☽ Limbus a Solis remoto ————	53.31.20
	21. 4. 0	Repet. Sol humilis ————	53.29.50
		☽ Lim.	

	Hor. Cor.		Diff. Obl.
	H. ' "		o ' "
Januarii 3.	19.19.20	☽ Limbus a boreâ frontis m	26.50. 0
	19.21.55	Repet. denuò	26.50.50
☽ in ♈ 25 ¹	19.24.50	Iterum optimè	26.52. 0
	19.36.30	Iterum ultimò	26.57. 0
	22.35. 0	♀ à Solis limbo remoto	13 58. 0
Januarii 8.	2.12. 0	♀ à Solis limbo remoto	14.56. 0
	4.23.15	☽ Limbus a Venere	7.27. 0
☽ in ♊ 21.	4.28. 5	Repet. denuò	7.28.40
	4.49.50	☽ Limbus a sequente Caudæ v	1.41.20
	4.53.30	Repet. iterum	1.42.40
Januarii 9.	6. 0.55	☽ Limbus a med. 3 ^{um} contig. in aqua ♊	8.40. 0
	6. 3. 5	Repet.	8.38.55
☽ in ♋ 4.	6. 6. 0	Iterum	8.37.40
Januarii 10	6. 8.25	☽ Limbus a quinta Ceti	47. 2.30
	6.11.15	Iterum	47. 1.30
☽ in ♋ 16.	6.13.15	Denuò repet.	47. 0.40
Januarii 12	5.32. 0	☽ Limbus ab Aldebaran	55.29.30
	5.34.50	Repet.	55.28.15
☽ in ♋ 10.	5.43.30	☽ Limbus a quinta Ceti	23.17. 0
	5.44.40	Iterum	23.16.40
	5.48.20	☽ Limbus ab Aldebaran	55.24.40
Deinde per octo dies continuos Luna haud visa est ob nubes.			
Januarii 20	17. 6. 0	☽ Limbus occid. a Corde Leonis	28.29.20
☽ in ♋ 27.	17. 8.45	☽ Limbus iterum a Corde ♌, melius	28.27.40
	17.11. 0	Iterum repet.	28.27. 0
	17.16. 5	☽ Limbus ab Afello Austrino.	7.17. 0
	17.18.30	Iterum melius	7.15.30
	17.28. 0	♂ à Corde Leonis	6.44.40
	17.34. 0	♀ à Corde Leonis	26.17.30
	H 2	☽ Limb.	

	Hor. Cor.		Diff. Obs.
	H. " "		o ' "
Januarii 21	8.27. 0	» Limbus occid. a Calce II ———	36.13.40
	8.29.40	Iterum ———	36.14.50
» in ♈ 7½	8.31.55	Repet. denuò ———	36.15.50
	8.40. 0	» Limbus occid. a Corde ♈ ———	17.40.30
	8.42. 0	Iterum ———	17.39.40
	8.48.10	» Limbus occid. a Calce II ———	36.23.40
	8.49.50	Repet. iterum ———	36.24.35
	8.56.20	» Limbus remot. a Dubhe ———	49.27.30
	8.58.15	Repet. denuò ———	49.27.30
	18.56.10	» Limbus occident. a Corde ♈ ———	13. 1. 0
» in ♈ 12½	19. 0.40	» Limbus orientalis a Corde Leonis ———	12.25.15
Luna horis horis vicina, sed quasi omnino plena. Habeatur ratio refractionis.			
Januarii 22	8.15.10	» Limbus orient. a Calce II ———	51.17. 0
» in ♈ 22.	8.18.15	Iterum repet. ———	51.18.30
Januarii 23	9.17.30	» Limbus a Polluce Geminorum ———	48.31.30
» in ♈ 7.	9.19.10	Iterum repet. ———	48.32.15
	9.23.30	Denuò ———	48.34.50
	18.24.15	» Limbus a Jove ———	9.34.15
» in ♈ 12	18.26. 0	repet. ———	9.33.10
	18.27.35	» Limbus a spica ♈ ———	37.42.40
	18.29. 0	Iterum a spica Virginis: ———	37.41.50
	18.35.30	» à spica Virginis ———	28.11.15
Januarii 26	16.16.50	» limbus a med. alæ ♈ ———	19.29.30
	16.18.45	Iterum repet. ———	19.30.30
» in ♈ 25.	16.24.30	» limbus a Lance borea ———	19.58.15
	16.27.30	repet. ———	19.57. 0
	16.37.40	» limbus a Lance Austrina ———	15.50.30
	16.42.55	» limbus a bor. frontis. ♈ ———	33.28.50
	16.48. 0	Iterum & melius ———	33.27. 0
			Jupiter

	Hor. Cor.		Dist. Obs.
	H. ' "		o ' "
Januarii 27	5.18. 0	Mercurius à Venere ————	5.15.30
	5.24. 0	repet. dist ♀ a Venere ————	5.14.40
	5.37. 0	Dist. Veneris a Marte ————	15.13.30
	5.53. 0	♂ à bor. sequentium in □ sub ✕ Aufst. ————	3.24. 0
Januarii 28	4.49. 0	♀ à Venere distantia ————	4.52. 0
	4.57.30	Iterum Venus a Mercurio ————	4.51.40
	5. 5.30	♂ à Venere ————	14.47.30
	18.16. 0	♂ limbus a spica ♄, utcumq; ————	35.32. 0
Januarii 29	18.19.30	♂ Limbus a spica Virginis ————	49. 4.30
	18.20.55	Iterum ————	49. 5.15
♂ in ♄ 8.	18.22.30	repet. tertio & melius ————	49. 5.50
	18.24.25	Iterum & ultimò ————	49. 6.40
Januarii 30	5. 8. 0	Mercurius a Venere ————	4. 9. 0
	5.18. 0	repet. ————	4. 8.30
	18.26.10	♂ Limbus a bor. frontis ♄ ————	23. 0.20
♂ in ♄ 21½	18.27.45	Iterum ————	23. 1. 0
	18.37. 0	repet. optime ————	23. 4.40
	20.11.50	♂ Limbus a Solis remoto (♂ Nonag. ————	59.23.10
	20.14. 0	Iterum sed dubie ————	59.21.20
	20.18.30	repet. melius ————	59.20.30
Januarii 31	4. 0. 0	Mercurius a Venere, de die, Sole splend. ————	3.55. 0
	4.20.30	♀ à Solis limbo prox. Sol humilis. ————	15.57. 0
	5. 3.30	♀ à Venere iterum ————	3.54. 0
♂ in ♄ 5.	18.46. 0	♂ Limbus a bor. frontis Scorpii ————	36.17.20
	18.49.40	Iterum repet. ————	36.18.50
Februarii 1	0.24. 0	Observavi distantiam ♀ a ♄ de die, 3 Sole clarissimo ac juxta Meridiem 3 3.44. 0	
	1.37. 0	♀ satis conspicuus distabat a limbo 3 Solis proximo, accuratè ———— 3 16.30.30	
			♀ à limbo

Hor. Cor.	Hor. Cor.	Dist. Obs.
H. " "	" " "	" " "
Feb. 3.	1. 3.30 ♀ à limbo Solis proximo	17.19.30
	5.30. 0 ♀ à Venere	3.39. 0
Feb. 11.	0.17. 0 ♀ à limbo Solis proximo	22.20.40
	0.20. 0 ♀ à limbo Solis remoto	22.52.40
	0.27. 0 ♀ à limbo Lunæ proximo	44.24.20
♂ in ♂ 10.	0.29. 0 Iterum	44.25.10
	2.42. 0 ♀ à limbo Lunæ	45.10.50
♂ in ♂ 11.	2.45.30 Iterum	45.12. 0
	2.57. 0 Iterum repet. & melius	45.15.20
Feb. 12.	4.32.35 ♂ Limbus a Venere	56.35.30
	4.36.25 repet.	56.36.20
♂ in ♂ 23½	4.38.25 Iterum & melius	56.37.15
	4.39.45 Denuò & bene	56.38. 0
	5.40. 0 Venus à Mercurio	8.25. 0
	5.42. 0 repet.	8.24.50
	7.36. 0 ♂ Limbus remotus ab Aldebaran	10.50. 0
♂ 25.	7.38.45 repet. melius	10.49. 0
Feb. 13.	8.30.25 ♂ Limbus a Calce Geminorum	23.51.40
♂ II 7½	8.34.50 Iterum repet.	23.50.10
Limbus occiduus Lacus Nigri Majoris illustrari coëptus, exiguâ parte ambitus ejus jam apparente. Luna recens à Quadraturâ primâ.		
Feb. 14.	6. 0.15 ♂ Limbus ab Aldebaran	13.42. 0
	6. 2.15 Iterum	13.42.50
♂ II 19½	6.37.35 repet. denuo	13.56.40
Feb. 15.	5.54. 0 Distantia ♀ a ♀. Mercurio humili	12.23. 0
	6.10.20 ♂ Limbus ab Aldebaran	26.48.50
		repet.

	Hor. Cor.		Diff. Obf
	H. ' "		o ' "
	6.13.15	repet. iterum	26.50.0
☾ 2½	6.16.30	☽ quasi conjuncta 16 ^a II ad Boream, distabat limbo Austrino 20 Min.	
	6.22.0	☽ Limbus ab Afello Austrino	32.15.50
	6.24.0	repet. denuò	32.14.45
	6.31.20	☽ Limbus ab Aldebaran	26.57.0
	Aldebaran a Stella infra Lunam, quæ est 16 ^a II		27. 3.30
Feb. 19.	7.50.25	☽ Limbus a Calce Geminorum	58.32.30
	7.53.10	repet. — — — — —	58.34.0
	7.53.30	☽ fere ☽ conjun. 17' infra Limb. Austrin.	
☽ ♄ 29. 40.	8.0.0	Saturnus a Calce Geminorum	58.52.40
	8.2.15	☽ Limbus a Calce Geminorum.	58.38.30
	8.12.10	repet. — — — — —	58.43.50
Feb. 20.	8.40.5	☽ Limbus remotus a Corde Leonis	20.13.40
	8.43.0	Iterum — — — — —	20.15.20
☽ in ♀ 15.	8.44.30	repet. denuò — — — — —	20.16.0
	8.48.45	☽ Limbus prox. a Corde Leonis	19.45.0
	Luna recens ab Oppositione Solis.		
Feb. 21.	10.4.15	☽ Limbus remotus a Corde Leonis	36.11.30
☽ in ♀ 1.	10.6.10	repet. bona — — — — —	36.12.30
Feb. 23.	17.50.20	☽ Limbus a Cauda Leonis	48.28.0
	17.52.5	repet. denuò — — — — —	48.28.45
☽ in ♀ 5.	Deinde ad Solis usque ortum expectavi, si forte liceret distantiam Lunæ a stellis orientalibus dimetiri; sed nubes subito ortæ, primum stellas Scorpîi, deinde ipsam Lunam eripiebant.		
Feb. 28.	0.40.0	☽ Distat a Solis limbo remoto	26.48.30
	17.47.0	☽ Limbus a bor. frontis Scorpîi	45.40.0
		repet.	

	Hor. Cor.		Dist. Obf.
	H. I. II		O. I. II
	17.48.50	repet. denuo	45.40.40
	17.55. 0	Bor. frontis m a seq. Cap. Sagittar.	43. 3.40
D in w 14.	18. 1. 0	Bor. frontis m a praced Cap. Sagitt.	40.15.40
	18. 3.40	D Limbus a bor. frontis Scorpii	45.46.10
Martii 12.	9.32.40	D Limbus a Corde Leonis	56.44.30
	9.34.35	Iterum & melius	56.43.15
D II 29.	9.44.30	Calx Geminorum a Corde Leonis.	54.35. 0
	9.48.40	D Limbus a Corde Leonis	56.37.15
Martii 18.	10. 6. 0	D Limbus a Corde Leonis melius	13. 5.30
	10. 7.45	repet. melius	13. 6. 0
D m 8 $\frac{1}{2}$.	10. 9.40	& iterum	13. 7.10
	11. 6. 0	Jupiter a Corde Leonis	19.40. 0
	11.11. 5	D Limbus occiduus a med. alæ m	26.58.30
	11.13. 5	Iterum repet.	26.57.30
Martii 19.	9.59. 0	D Limbus a Corde Leonis	28.12.30
	10. 0.55	Iterum	28.13.30
D in m 23 $\frac{1}{2}$	10. 7.30	D Limbus a Med. alæ Virginis	12.16.40
	10. 9. 0	Iterum	12.16. 0
Martii 20.	9.18.45	D Limbus occiduus a Corde Leonis	43.13. 0
	9.25. 0	repet. denuo	43.16.10
	Luna in Libra 8 $\frac{1}{2}$, Perigra & quasi Soli opposita.		
Martii 21.	9.56.15	D Limbus orient. a Corde Leonis	59.31. 0
	9.58.50	Repet.	59.32.15
D in m 24 $\frac{1}{2}$	10.19. 0	D Limbus boreus a Lucida Coronæ	41.20. 0
	10.27.15	D Limbus orient. a Med. alæ m	19.26.30
	10.29.20	Repet. denuo	19.27.45
Martii 22.	13. 8.55	D Limbus a med. alæ m	36.20. 0
	13. 1.25	Iterum	36.21. 0
		C limbo	

	Hor. Cor		Dist. Obs.
	H. ' "		o ' "
in m 12	14. 0.50	Limbus a bor. frontis Scorp̃ii — *	16.48. 0
	14. 2.55	repet. denuo — — — —	16.47. 0
Martii 23.	17. 9.30	Limbus a sequente Cap. ♄ — — — —	43.14.45
in m 28½	17.12.20	repet. — — — —	43.13.15
	17.18.40	iterum bene — — — —	43.10.15
Tempora in hac Observatione vix satis certa videntur, nam fieri potest ut omnia habita sint momenta tribus minutis citius: credo tamen fuisse ut scriptum est. Tutius ibis in medio.			
Deinde ob Patris optimi luctuosum obitum, curasq; & negotia inde orta, his rebus strenuè incumbere haud vacavit.			
Maii 11.	9.11.45	Limbus a spica m̃ — — — — *	52. 1.20
in ♈ 27	9.13.15	Iterum repet. — — — —	52. 0.35
Luna prope quadraturam Solis & recens a Coniunctione Saturni, cui satis vicina quasi perpendiculariter imminebat.			
Maii 15.	8.58. 5	Limbus a Corde Leonis — — — —	60. 1. 0
in ♊ 26	9. 7. 5	Jupiter a Lunæ limbo — — — —	42.25.20
	9. 8.50	repet. iterum — — — —	42.26. 0
	9.14. 0	Jupiter a Corde Leonis — — — —	17.42. 0
Maii 16.	9.11.20	Limbus a Media alæ Virginis — — — —	34.43.50
in m 11	9.13.55	repet. denuò — — — —	34.45. 0
	9.19. 0	Limbus a spica Virginis — — — —	22. 0. 0
	9.27.15	Limbus a Jove — — — —	57.30. 0
	10. 8.15	Limbus a spica Virginis — — — — *	22.20.30
Maii 23.	8.24. 0	Mercurius a Venere — — — —	21. 7. 0
Maii 24.	6.40. 0	Venus a Solis limbo proximo — — — —	43.23.30
	8.17.30	Venus a Mercurio — — — —	20.47.30

	Hor. Cor.		Dist. Obi.
	H. L. u.		o. ' "
Maii 25.	8. 9. 0	Venus a Mercurio ———	20.30.40
	8.25.30	repet. iterum ———	20.30.20
	9.40. 0	Saturnus cum satellite visus est ita annexo, ut cum borealior fuerit, perpendiculum in medium precedentis Anse inciderit : itaq; satelles recens a Coniunctione & Perigeo. ———	
Maii 26.	8.15. 0	Distantia Veneris à Mercurio ———	20.16.30
Maii 27.	8.16. 0	Eadem distantia ♀ a ♀ ———	20. 5. 0
Maii 28.	8.25. 0	Venus a Mercurio ———	19.56. 0
Junii 5.	8.34. 0	Venus a Mercurio ———	20.40. 0
Junii 6.	8.34. 0	iterum Venus a Mercurio ———	21. 0.15
	8.45. 0	repet. ut prius, alto ♀ 8 quasi grad. ———	21. 0.15
	*9.22. 0	Venus distabat a Cornu Lunæ Boreo ———	0.17. 0
in 8. 9.		vel paulo plus semidiametro Lunæ ; simulq; Cornu Lunæ boreum & Venus æqualiter distabant a Mercurio : Cujus situs etiam si jam occiderat, ex positione Instrumenti quo ultimo capta est distantia Veneris a Mercurio, innotuit.	
Junii 7.	6. 3. 0	Venus a limbo Solis remoto ———	45.18.40
	8.29. 0	Venus a ♀ optime alt. ♀ 15 grad. cir. ———	21.24.20
	8.38. 0	Cor Leonis a Mercurio bene ———	34.26.10
	8.47. 0	Cor Leonis a Venere ———	13.11.20
	8.54. 0	Cor Leonis a Jove ———	19.34. 0
	9. 5. 0	Saturnus a spica Virginis ———	50.18.30
	9.11.45	Luna limbus a spica Virginis ———	55. 9.10
in 8. 24.	*9.19. 5	repet. bene ———	55. 5.15
Junii 8.	8.16. 0	Venus a Mercurio bene alt. ♀ 11. gr. ———	25.2.45
	8.20. 0	Mercurius a Corde Leonis alt. ♀ 9 gr. ———	33.53. 0
	9. 3.30	Limbus a spica Virginis ———	41.37. 0
in 8. 9.	9. 5.20	iterum repet. ———	41.36.10
	9.15.30	Limbus a Corde Leonis ———	13. 5.40
		iterum	

	Hor. Cor.		Dist. Obf.
	H. "		o "
	9.16.50	iterum repet.	13. 6.30
	9.20. 0	☽ Limbus a spica Virginis	* 41.29. 0
Junii 9.	8.39. 0	Venus a Mercurio	22.24.15
	8.46. 0	Mercurius a Corde Leonis	33.22.30
	9. 8.25	☽ Limbus a Corde Leonis	26.58.10
☽ in ♍ 23	9.12.10	reperita	26.59.40
	9.41.30	☽ Limbus a spica Virginis	* 27.36.30
Junii 10.	8.40. 0	Mercurius a Corde Leonis	32.57.30
	8.47. 0	Mercurius a Venere	23. 0.15
☽ in ♋ 7.	9.38. 0	☽ Limbus ab Arcturo	29.33. 0
	9.43.40	Lunæ limbus a spica Virginis	* 14.14.50
	10. 1.40	☽ Limbus a borea frontis ♍	51.57. 0
Junii 11.	8.41. 0	Mercurius a Corde Leonis	32.37. 0
		Alt. Mercurio 6 gradus.	
Junii 12.	8.32. 0	Mercurius a Corde Leonis	32.21. 0
		Alt. Mercurio 6° 30' circiter.	
Junii 13.	8.39. 0	Mercurius a Corde Leonis	32. 9.20
		Alto Mercurio quasi 5 grad.	
		☽ admodum attenuatus in cornu, ac cras vix sperandus.	
Junii 14.	8.39. 0	Mercurius a Corde Leonis sed ægre	32. 2.20
		Altitudo Mercurii 4 grad. 30' Circiter.	
		Mercurius hac vice ægre admodum visus, atq; observatio eapropter aliquatenus incerta, intra semiminutum. Dein.	
☽ in ♋ 3.	9. 1. 0	Luna limbus a spica Virginis	45.18. 0
	9. 9. 0	iterum repet.	45.21. 0
	9.12.45	repet. denuò & optime	* 45.22.15

	Hor. Cor.	Dist. Obs.
	H. ' "	o ' "
Junii 15.	8.57.25 Luna limbus a spica Virginis ———	59.32.45
19.	9. 1.20 iterum repet. ———	59.34.20

In his tribus ultimis Lunæ Observationibus non admodum fidendum est temporibus, quæ incertius ob neglectum Horologium ascribuntur; intra unum vel alterum minutum tamen certas esse reputo.

Junii 16.	14.30. o Luna Eclipsin passa est exigua admodum à parte Meridionali: principium vel finem annotare cum aliqua certitudine ob obliquam Incidentiam in umbram Terræ haud licuit: in genere tamen citius accidisse quam Calculus prædixerat constabat, & in medio Eclipsi chordam cornua jungentem quasi 11 min. fuisse; unde duratio non nisi 47 min. Paulo ante initium, Hora scilicet accuratè 13 hor. 30 min. Lunæ limbus remotus distabat ab Humero sinistro Aquarii 44° 34'.
	Hucusq; apud <i>Islington</i> commoratus sum. Situs Observatorii nostri (ne nescias) fuit præcisè in Meridiano <i>Portæ Novæ Urbis Londinensis</i> , ita ut medium Observatorii Regii <i>Grenovicensis</i> inde ad ortum distaret 460 52½. Sub Elevatione Poli 51° 32' 45" proximè.

Solis Eclipsis passim Observata, Julii 2°

Calculo prædixeram Londini.

Julii 2.	Initium ———	2.10. 0
	Finem ———	4.28. 0
	<i>Londini vero vidi.</i>	
	Initium ———	2.10. 0
	Finem ———	4.27. 0
		<i>Grenovic</i>

Temp. Obs.

H. ' "

Grenovici observavit D^{ns} Flamsteedius.

Jam Coepisse Eclipsin	_____	_____	_____	2.12. 0
Finem vero accuratissime	_____	_____	_____	4.27.37

Oxonii D^{ns}. Rookius vidit. Lat. | 51.45. 0

Initium	_____	_____	_____	2. 3. 0
Finem	_____	_____	_____	4.21.14

Parisiis in Observatorio.

Initium ex Phasibus deductum	_____	_____	_____	2.25.30
Finis certius	_____	_____	_____	4.43.23
Hinc diff. Long. Parisiorum & Londini	_____	_____	Grad.	2.25. 0

Parisiis, Bullialdo.

Defectus unius Dig.	_____	_____	Alto Sole 50. 0	2.29.30
Finis.	_____	_____	Alto Sole 29. 0	4.42. 0

Dublinii Hibernorum observante D^{no} W. Molineux.

Finis Eclipsis	_____	_____	_____	3.56. 0
Lat. Dublinii	_____	_____	_____	53.20. 0
Diff. long. Dublinii & Londini	_____	_____	Grad.	6. 8. 0

Drobeda Hiberniae. Sub alt. Poli—Grad. | 53.40. 0

Initium	_____	_____	_____	1.37.30
Finis	_____	_____	_____	3.56.20

Drobeda sub meridiano Dublinii ferè—*Lisbonæ Lusitaniae.*—Sub Lat. | 38.50. 0

Initium	_____	_____	_____	1.20. 0
Finis	_____	_____	_____	4.12. 0

Longitudinam diff. inter *Lisbonam & Lond.* Grad. | 9. 0. 0*Noriburgi.*—Sub alt. Poli | 49.26. 0

Finis	_____	_____	_____	5.17. 0
Hinc Noriburgum orientalius Londino	_____	_____	Grad.	11. 7.30

Dantisci

		Hor. Obs.
		H. ' "
<i>Dantisci.</i> —————	Sub Lat.	54.23. 0
Initium —————		3.47. 0
Finis —————		5.36. 0
<i>Dantiscum Londino</i> ad ortum ———	Grad.	18.50. 0
<i>Lipsia Saxonia.</i> —————	Sub Lat.	51.20. 0
Initium —————		3.17.40
Finis —————		5.18.30
<i>Lipsia Londino</i> orientior ———	Grad.	12.23. 0
<i>Bononia Italia.</i> —————	Sub Lat.	44.30. 0
Finis Eclipsis —————		5.28. 0
Hinc <i>Bononia Londino</i> orientior ferè —	Grad.	11.30. 0
In insula <i>Barbada.</i> —————	Sub. alt. Poli	13. 5. 0
Initium Eclipsis mane —————		8.44.51
Finis —————		9.59.45
Solis defectus exiguus in limbo Boreo. ———		
Hinc insula <i>Barbada Londino</i> occidentior —	Grad.	59.30. 0

*Eclipsis Lunæ nec Londini nec Grenovici
Observabilis ob nubilum Tempus. Parisiis
autem.*

		H. ' "	H. ' "
Decemb. 11	Initium D ^{no} Cassino ———	9.28.40	D ^{no} de la Hire 9.29.20
	Immersio Calcis II ———	9.34.28	9.34.46
	Emerferat Calx II ———	10. 8.33	Emerfio. 10. 8.25
	Finis Eclipsos ———	12.24.12	12.26.30
	Medium Parisiis ———	10.56.26	10.57.55
	<i>Londini</i> vero Medium. ———	10.47. 0	

THE

T H E

Design and Use

O F T H E

Foregoing Observations.

TH E Advantages of the Art of finding the Longitude at Sea, are too evident to need any Arguments to prove them. And having by my own Experience found the Impracticability of all other Methods propos'd for that Purpose, but that derived from a perfect Knowledge of the *Moon's Motion*: I was ambitious, if possible, to overcome the Difficulties that attend the Discovery thereof.

And first, I had found it only needed a little Practice to be able to manage a five or six Foot Telescope, capable of shewing the Appulses or Occultations of the *Fix'd Stars* by the *Moon*, on Ship-board, in moderate Weather; especially in the First and Last *Quarters* of the *Moon's Age*, when her weaker Light does not so much efface that of the *Stars*. Whereas, the Eclipses of the *Satellites of Jupiter*, how proper soever for *Geographical Purposes*, were absolutely unfit at Sea, as requiring Telescopes of a greater Length than can well be directed in the rowling Motion of a Ship in the Ocean.

Now the Motion of the *Moon* being so swift, as to afford us scarce ever less than two Minutes for each Degree of Longitude, and sometimes two and half; 'tis evident, that were we able perfectly to predict the true Time of the Appulse or Occultation of a *Fix'd Star* in any known Meridian; we might, by comparing therewith the Time observed on board a Ship at Sea, conclude safely how much the Ship is to the Eastward or Westward of the *Meridian* of our *Calculus*.

But after much Examination, and carefully collating the Numbers of our Author (though generally better than those that went before him) as likewise those of *Tycho*, *Kepler*, *Bullialdus*, and our *Horrox*,

with many accurate Observations of the *Moon*, carefully made on Land; it does not appear, that any of these *Tables* do represent the Motions with the Certainty requir'd; and though many times the Agreement seem surprizing, when the Errors of the several *Equations* compensate one another; yet in those Parts of the *Orb* where they all fall the same way, the Fault is intollerable, and the Result many times not to be depended on to more than one Hundred Leagues; that is to say, 'tis wholly insufficient.

Yet still this Fault is *Artificis*, not *Artis*: For observing the *Period* of the *Lunar Inequalities*, which is perform'd in eighteen Years and eleven Days, or two Hundred and Twenty Three *Lunations*; 'tis found that the Returns of the Eclipses, and other Phænomena of the *Moon's* Motion, are very regularly perform'd; so that whatever Error you found in a former *Period*, the same is again repeated in a second, under the like Circumstances of the same Distance of the *Moon* from the *Sun* and *Apogæon*.

Thus, from the Observation made of the Eclipse of the Sun, which was *June 22. 1666.* in the Morning, seen at *London* and *Dantzick*; I was enabled to predict, with the Certainty you see, that other, which I observ'd *July 2. 1684.* by allowing the same Error I found in the *Calculus* of the former. And the like with equal Certainty will do, in the Cases *extra Syzygias*, when the Mean and Synodical Anomalies are nearly the same, about the same time of the Year. Being thus assured from the Certainty of these *Revolutions*, that all the intermediate Errors of our *Tables* were not uncertain Wandrings, but regular Faults of the *Theories*; I next thought how I might best be inform'd of the Quantity and Places of these Defects: That being appriz'd how much and which way my Numbers err'd, I might apply the Difference so, as at all times to represent the true Motion of the *Moon*. Nor was there any other way, but from the Heavens themselves, to derive this Correction; by a sedulous and continued *Series* of *Observations*, to be collated with the *Calculus*, and the Errors noted in an *Abacus*: From whence, at all times under the like Situation of the *Sun* and *Moon*, I might take out the Correction to be allow'd.

And having by me the *Sextant* I made to observe the *Southern Stars* at *St. Helena*, in the Year 1677; I fix'd it for this Purpose; resolving to have continued to observe, till I had fill'd my *Abacus*, so as it might have the Effect of exact *Lunar Tables*, capable to serve at Sea; for finding the *Longitude* with the desir'd Certainty.

With

With this Design, I applied the Leisure I had procur'd my self, about the Year 1683, to observe diligently, as often as the Heavens would permit, the true Place of the Moon, especially as to Longitude; and, in the Space of about 16 Months, I had gotten near 200 several Days Observations, most of which I collated with the *Horroxian Theory* (whose *Calculus* is something more compendious than that of our *Author*) and having placed the Errors in an *Abacus*, I perceived how regular the Irregularities were, and that where the Moon had been exactly observ'd formerly, at the Distance of one or more Periods of 223 Months, I could even predict the Error of the *Tables*, with a Certainty not much inferiour to that of the Observations themselves. But this Design of mine was soon interrupted by unforeseen Domestick Occasions, which oblig'd me to postpone all other Considerations to that of the Defence of my Patrimony: And, since then, my frequent Avocations have not permitted me to reassume these Thoughts. However, when the *Annals* of the *Greenwich* and *Paris Observatories* shall be made publick, it may be hop'd, we may extract from them such a *Series* of Lunar Observations, as may suffice for the Purpose intended.

In the mean time, such as mine are, I take this Opportunity to present them to the Publick, and to preserve them; assuring, that as on the one Hand they were made with a very sufficient *Instrument*, with all the Care and Diligence requisite; so in the remote *Voyages* I have since taken to ascertain the *Magnetick Variations*, they have been of signal Use to me, in determining the *Longitude* of my *Ship*, as often as I could get a Sight of a near *Transite* of the *Moon* by a known *Fix'd Star*: And thereby I have frequently corrected my *Journal* from those Errors, which are unavoidable in long Sea-Reckonings.

If therefore you happen at *Sea* to observe nicely the Time of an *Occultation* or close *Application* of a *Star* to the *Moon*; and can find a correspondent Observation, about the same mean *Anomaly* and Distance of the *Moon* from the *Sun*, (either among these of mine, or in any other Collection of Observations accurately made) especially near the same Time of the Year; and, above all, after the aforesaid *Period* of 18 Years and 11 Days; you may, without sensible Error, from thence pronounce in what *Meridian* your *Ship* is; taking care, in so operose a Calculation, to commit no Mistake; and, notwithstanding the Direction the Moon gives you, not confiding so much therein, as to omit any of the usual Precautions to preserve a *Ship* when she approaches the Land.

I had intended to insist more largely upon this Method of obtaining the *Moon's Place*, and, by Consequence, the *Longitude* at *Sea*; but that I find that it requires a just Treatise, too long to be subjoyn'd to this

Appendix:

Appendix: And, more especially, that the Great Sir *Isaac Newton* (to whom no Mathematical Difficulty is insuperable) has been pleas'd to give us a *True* and *Physical Theory* of the *Moon's* Motions, whereby the Defects of all former *Tables* are so far amended, that 'tis hop'd, the Error may scarce ever exceed three Minutes of Motion, or so little in *Longitude*; that, perhaps, it may be thought a sufficient Exactness for all the Uses of *Navigation*. If therefore what is here offer'd find a kind Acceptance from those that it chiefly concerns, I shall be encourag'd to proceed on a Work I have long meditated, to improve the above-mention'd *Period*, as to the Abbreviating the Computation of *Eclipses*, and, in general, to facilitate the too laborious *Calculation* of the *Moon's* Place *extra Syzygias*.

I chose to Publish these Observations so as to be serviceable to Foreigners (for which Reason also our Author gives all the Titles of his *Tables* in *Latin*.) Among them will be found several Observations of all the Planets, by which the *Tables* may be examin'd: Some of them are rare, and the First of their Kind; as the Distance of *Venus* from the *Sun* in her *Retrograde Conjunction*; and *Mercury* from the *Sun* taken at Noon-day: And the same Planet seen and observ'd very near his *Aphelion*, where he had never before been seen in these Parts of *Europe*: The which are to be found in *Pag. 63.* and abundantly evince the Certainty of *Mr. Street's Mercurial Astronomy*.

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F I N I S.

